The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII. CHICAGO, ILLINOIS, MARCH 30, 1907. No. 13.

Original Articles

CHANGES IN THE LYMPHOID TISSUE IN CERTAIN OF THE INFECTIOUS DISEASES.*

W. T. COUNCILMAN, M.D.
BOSTON.

In 1898, in a paper read before the Association of American Physicians, I called attention to a form of nephritis associated with acute infections, which, although recognized and described, did not seem to me to have been accorded the attention it deserved. This, the acute interstitial non-suppurative nephritis, is characterized by the appearance of foci of cellular infiltration in the interstitial tissue of the kidney. In some cases the extent of the cellular infiltration is so great that marked macroscopic changes are produced in the organ. In these cases the kidney is greatly enlarged, the capsule is distended, thin and often separates spontaneously on section. In children the fetal markings are less distinct and often obliterated. The suface is pale, of a grayish opaque color, somewhat resembling the amyloid kidney, mottled with irregular more hyperemic areas. The stellate veins of the surface are injected and often show punctate ecchymoses around them. The surface may be irregular, due to the projection of small irregular nodules which are more opaque than the surrounding tissue. On section of such kidneys the normal markings of the cortex are obliterated and the contrast between pyramids and cortex is less distinct. The increase in size is principally due to swelling of the cortex, which may be three or more times thicker than normal. The general color of the cut surface is grayish and opaque with areas of injection and scattered ecchymoses. Corresponding to the elevated areas on the surface there are often areas more opaque which extend in lines from the pyramids to the cortex. The tissue is soft, lax and easily broken; it is moist and an opaque milky fluid may be pressed out or flows spontaneously from the cut surface. The weight of the kidneys may be enormously increased. In one case of diphtheria and measles in a child, aged 2 years, the combined weight of the kidneys was 480 grams. In another child with scarlet fever, aged 8 years, the kidneys weighed 400 grams. I have found such extreme cases only in children dying of scarlet fever or diphtheria. In the majority of cases the enlargement is but slight and there may be no macroscopic evidence of the condition.

Microscopic examination shows a cellular infiltration of the interstitial tissue usually accompanied by accumulations of similar cells in the veins and capillaries. The cells have a tendency to accumulate in foci which are found more often than elsewhere at the base of the pyramids and beneath the capsule. The cells were regarded as lymphoid in character and of the type of the plasma cells. Since 1898 in all routine examinations of tissue the presence of these cells in the tissues and their origin have been studied. The interstitial cell accumulations are most frequent in the kidney, but are not confined to this organ. Next to the kidney they are most frequently found in the adrenal glands and they are occasionally found in the pancreas and in the lungs. They are most common in the organs of children, and the marked cases with great enlargement of the kidneys are only found in children. In the kidneys in smallpox it is a common condition, but I have never found such extreme degrees as to lead to macroscopic changes. I have been struck with the frequency of the condition in the kidneys of mice. In a large number of autopsies on mice made by Dr. Tyzzer in the course of his carcinoma work such interstitial foci were found in about one-fifth of the cases.

As a routine the tissues were hardened in Zenker's fluid and thin paraffin sections were stained in methylene blue and eosin. For certain purposes both Mallory's connective tissue stain and the phosphotungstate hematoxylin were used, but the descriptions are based on the methylene and eosin stain. Sections were taken from the outer edges of the pieces of tissue where the hardening agents had fully penetrated. There is great variation in the character of these cells, but it is possible to divide them into three classes.

1. Small lymphoid cells of the usual type, with a nucleus rich in chromatin which is arranged peripherally with projections into the interior, and a variable amount of pale cytoplasm. The nuclei vary little in size and are from 3 to 5 microns in diameter. Most of the cells give the appearance of free nuclei, but usually in cells lying separate the faint irregular outline of the cytoplasm can be distinguished outside of the nucleus. No structure and no granulation can be distinguished in the cytoplasm. It usually stains a faint lilac color with the methylene blue and eosin.

2. The most numerous cells are large cells with a rather vesicular nucleus. They vary greatly in size, being from 6 to 15 microns in diameter. The largest I have seen was 18 microns, the average is about 9. The cell outline is usually round, it may be irregular from mutual pressure. Occasionally cells are found apparently in active ameboid motion with long, usually blunt, cytoplasmic projections. The cytoplasm stains a pale blue and is non-granular in the methylene blue and eosin stain. Intense stain with phosphotungstate hematoxylin brings out a very fine distinct granulation in many of the cells. Occasionally faint vacuoles can be distinguished, usually at the periphery. In the best preserved preparations centresomes can be seen often in pairs. The nucleus is relatively large. It varies in size from 4 to 8 microns, the average being about 6. It is round and usually placed eccentrically. It contains relatively little chromatin. There is a clear nuclear border appearing

* Lecture delivered before the Harvey Society, Feb. 23, 1907.

as a rim of chromatin with slight projecting masses. From these masses filaments extend into the nucleus and often end in large irregular masses of chromatin which usually stain less intensely than that in the periphery. An intranuclear network apart from the chromatin can not be distinguished. In some cases these cells form the majority.

3. The third sort of cells, between which and the cells just described there are transitions, correspond to the plasma cells. These show considerable variation in size, the cytoplasm stains intensely with methylene blue and with most other nuclear stains. The nucleus is relatively small, always placed peripherally, its edge often in line with the edge of the cell; the chromatin is abundant and placed around the periphery. The nucleus somewhat resembles that of the small lymphoid cell. The cytoplasm is non-granular and alongside of the nucleus is a clear crescentic-shaped area in which the material which gives to the general cytoplasm its characteristic stain is absent. With the methylene blue and eosin combination this area stains faintly with eosin. The cytoplasm seems to be of firm consistency, the cells are round or oval and tend to retain this shape under conditions of mutual pressure. In addition to these, which are the characteristic cells, there are variable numbers of eosinophile and mast cells. There are also, particularly in the more advanced cases, numbers of large cells with vesicular nuclei and vacuolated protoplasm slightly staining with eosin which are phagocytic for the lymphoid cells and often contain one or several of these enclosed in vacuoles.

These same cells of the lymphoid type are contained in the vessels and are most numerous in the straight veins of the pyramids. I have found numerous cases in which they were confined to these vessels and absent in the interstitial tissue. There is a certain difference in that the typical plasma cells are relatively much more numerous in the tissues than in the vessels. When present in the pyramidal vessels in large numbers the cells may also be found in the capillaries of the cortex. I have rarely found them in the glomerular vessels. The pyramidal vessels containing the cells are dilated, and the cells are loosely contained in them or closely packed. I have never found anything approaching the mural arrangement of polynuclear leucocytes in the vessels of an inflamed area. Similar cells are occasionally seen in the blood contained in sections of arteries and veins, but never in considerable numbers. Numerous nuclear figures are found in the cells, both those within the vessels and in the interstitial tissue. Nuclear division is accompanied by peculiar changes in the cell cytoplasm. The cytoplasm becomes filled with basophilic granules, and in the tissue a cloud of such granules is often seen around the cell as though cast off in the act of division.

All of these cells are ameboid, the small lymphocyte probably the least so. I have not infrequently seen them in the act of emigration and in the rapidly hardened tissues the forms assumed by the free cells can be interpreted only in this way. In the kidneys more or less degeneration is usually associated with the presence of the foreign cells and in the most marked cases their presence in such immense numbers in itself produces disorganization of the tissue. I have not been able to regard them, however, either in the kidneys or in other tissues as merely a reaction to injury. In the kidneys of mice there is frequently an infection with *Klassiella muris*, but I have not been able to see any local relation between the various forms of this organism and the presence of the cells. In the adrenals particularly they may be found in foci in which the tissue appears perfectly normal. The only place I have found them in which their presence is definitely associated with parenchymatous injury is in the interstitial tissue about the focal lesions of the testicle in smallpox.

It is certain that these cells can only reach the tissues from the blood. There are no local cells which can give rise to them, and their presence in the vessels and their emigration make their blood origin evident. The abundance of nuclear figures in the cells both within and without the vessels shows that when brought to the tissues their number is rapidly increased by proliferation. I have been at a loss to account for their presence in the kidneys in such large numbers. In the case of accumulations of polynuclear leucocytes in vessels and in tissues we are warranted in assuming a positive chemotaxis exerted on the cells within the vessels by the single or combined action of parasites and injured tissue. In the interstitial foci we can exclude any local effect of parasites and, although there is always in these cases some degeneration, there seems to be no relation between the locality and extent of the degeneration and the presence of the cells. I was at one time inclined to regard their accumulation as mechanical. There must be slow flow and low pressure of blood in the venous groups of the pyramids, where these cells principally accumulate, owing to the length, the abundance and large size of the vessels, and the further fact that the entry of blood into them is preceded by a double capillary circulation. This would tend to cause foreign substances in the blood, and these cells are foreign to the normal blood, to accumulate here. In the kidney in a case of pernicious malarial fever with great numbers of parasites in the blood the principal intravascular accumulations of the parasites were in these vessels. But such a mechanical theory will not explain their accumulation in other vessels of the kidney nor in other organs. It seems to me that we must assume the action of a positive chemotaxis coming from the tissues and exerted on these cells alone. There are no polynuclear leucocytes in the vessels with them, except the few which might be found in the amount of blood, nor are they present in the tissues. In all of the cases in which the cells appear we have evidence of the diffused action of injurious soluble substances and it is possible the substances themselves or products formed from their action on cells may exert a local influence. Some support is lent to the mechanical theory by the presence of these cells in comparatively large numbers in the liver capillaries.

But little attention has been paid by those who examine blood smears to the presence of these cells. Cell differentiation by this method is based on the presence in the cell cytoplasm of granules which take a specific stain with certain dyes. Few methods of work have been given which have been of more importance in increasing knowledge than this method of Ehrlich. The essential principles of leucocyte differentiation and origin which he deduced from study of the blood and marrow by the method still stand. The method, however, has decided limitations when it comes to the differentiation of cells which have no specific granulation. For the differentiation of such cells we must depend on size of cell and nucleus and structure, character and staining of cytoplasm, distribution and amount of chromatin in nucleus, etc. There is always difficulty in the classification of single cells, as is shown by the perennial warfare which is waged concerning the differentiation and

origin of the cells which appear in injured tissues. In the study of tissues we take into account more the relations of cells in the formation of the tissue than their characteristics as single cells. Few cells seem more characteristic than the liver cells, and yet we may be very uncertain in the recognition of a single liver cell separated from its organic connection. The cells in question have generally been grouped with the mononuclear cells of the blood. In the very careful study of the blood of smallpox by Brinckerhoff, Magrath and Bancroft no attempt was made to differentiate the varieties of mononuclear cells. The interstitial cells seem to me to correspond best with the cells described by Türk under the name of irritation cells. He regards these cells as coming from the marrow and representing a differentiation of the marrow cell in a direction opposed to the normal differentiation into the polynuclear leucocyte. He describes them as uninuclear, non-granular cells whose size varies. They resemble the small and medium sized lymphoid cells of the marrow, but are distinguished from these by the small relative size of the nucleus. The nucleus contains abundant chromatin, is sharply circumscribed, has definite structure and rarely shows nucleoli. It is eccentrically placed in the cytoplasm. The protoplasm is compact and stains intensely with methylene blue, often more deeply than the nucleus. He found these cells in the blood in long-continued leucocytosis or in the cachexias of anemia, they appearing in the same conditions in which a few myelocytes and erythroblasts become washed into the blood. The irritative cells of Türk have received much more attention at the hands of French than of German authors and have received special mention in the examination of blood in smallpox.

For the origin of these cells we must turn to the lymphoid tissues, to the lymph nodes and the diffusely distributed similar tissues.

I shall preface my remarks on pathologic conditions by some statements of the normal. The lymph node is essentially composed of a mass of small lymphoid cells intersected by spaces and channels. There is a broad space or sinus around the convexity of the kidney-shaped structure, and from this channels are given off which run toward the hilus separating the cell mass into small divisions or strands. The sinuses are crossed by numerous strands formed, the larger by connective tissue, the smaller by anastomosis of cell processes. The sinuses and the septa are lined by endothelial cells and the cell strands are composed of such cells. The lymphoid cells are supported by a reticulum of connective tissue and probably by a finer reticulum formed of branching cells.

In the masses of small lymphoid cells, particularly along the convexity, there are round or oblong foci of differentiated cells. These foci were first described by His and afterward more fully studied by Fleming, who regarded them as the centers of cell production or germinal centers. The diffusely distributed lymphoid tissue represented by the tissue in the alimentary canal between the submucosa and the epithelium differs from this structure both in the character of the cells and in their arrangement. In this tissue there are at intervals cell aggregations resembling a portion of a lymph node with one or several germinal centers. The definite lymph sinuses which are so conspicuous in the node are not evident in this tissue. Masses of lymphoid tissue very similar to the cell aggregations which compose the intestinal follicles are found in the spleen along the arterial branches. There are also small lymphatic foci in the lungs of children which repeat in miniature the structure of the node. I have never known just where to place the thymus in the category of the lymphoid tissues. It contains no germinal centers and has seemed to me a place of destruction of lymphoid cells by phagocytes rather than of their formation.

There is one thing which comes out strongly in the study of the lymphoid tissues, and that is their preponderance in the child. There is a steady atrophy with age. The activity of the intestinal lymphoid tissue is the most persistent. One can, as a rule, easily judge of lymphoid activity by the presence of germinal centers. In the lymph nodes of children they are rarely absent, in adults they are usually absent unless there is some condition which excites activity in local nodes. Another point of interest is the greater activity of the tissue in small mammals. In the monkey, rabbit, guinea-pig, dog and mouse active lymphoid tissue is the rule.

Under normal conditions in the nodes cell production is confined to the germinal centers and the terminal cell is the small lymphoid cell. The cells composing the centers differ so much in appearance from these that one has at first the inclination to regard the center as a definite tissue enclosed in the node in some such way as the islands of Langerhans are enclosed in the pancreas. This is accentuated by finding at times a more or less distinct capsule around the center separating it from the surrounding tissue. Usually the small lymphoid cells are massed more closely immediately around the germinal center. The cells in the germinal center have a very indefinite, loose, pale protoplasm not granular and staining a faint lilac with the methylene blue and eosin stain. The cell outlines are indefinite, and in many cases can not be distinguished. The nuclei vary in size from 5 to 8 microns and are typically vesicular. They have a sharp edge and a small amount of chromatin which is placed at the rim and in small clumps in the interior. Thin chromatin filaments usually connect the single masses. Nuclear figures are very abundant and usually imperfectly preserved. The cell mass much resembles active embryonic tissue. Among these cells, and progressively increasing in number toward the periphery, there will be found numbers of the small lymphoid cells, and in the tissue outside of the center scattered germinal cells will be found. There is always found in the center rather evenly distributed among the germinal cells a number of larger cells, with vacuolated acidophilic cytoplasm and large, pale, vesicular nuclei. These are eminently phagocytic and contain cell and nuclear fragments seemingly derived from small lymphoid cells. Nuclear detritus may also be seen not enclosed in phagocytic cells. As Fleming and others have shown, capillaries are abundant in these centers. As much as the germinal cells seem to differ from the small lymphoid the transition to the latter can be followed. The change seems to be produced by contraction of both cytoplasm and nucleus. The transudation stream is evidently from the center to the periphery, and the newly formed cells are swept by this into the surrounding tissue.

The germinal centers play an interesting part in the pathology of the tissue. Oertel was the first to show that in diphtheria there were foci of necrosis in the lymph nodes corresponding to the germinal centers. Similar foci are common in scarlet fever, in smallpox and in other conditions. The necrosis is rarely regional, usually all the germinal tissue in nodes, in spleen and in intestine is affected. The cells seem to be extremely vulnerable, for they are equally affected in seemingly

different toxic conditions. The presence and the contents of the phagocytic cells show that necrosis takes place even under normal conditions. In many infectious conditions the germinal centers are not affected, but I have not been able to make as full comparative studies in this direction as I wish to. In a series of cases it is easy to follow the course of the pathologic process in the centers. The destruction is due not only to the vulnerability of the cells, but to the abundance of the capillaries and the probably abundant transudation which brings a greater amount of the toxic substance contained in the blood in contact with them. I do not believe that in this case the destruction is by phagocytes, but that these simply ingest the dead and injured cells.

There seems at first sight a lack of harmony in the facts set forth; in smallpox, scarlet fever and diphtheria the germ centers which must be regarded under normal conditions as the source, either principally or alone, of the normal lymphoid cells, are destroyed, yet in these diseases there is a vast increase of cells of the lymphoid series. I have recently again gone over a large number of lymph nodes from cases of diphtheria, scarlet fever and smallpox. All of these show the same conditions, but the diphtheria nodes, owing probably to better preservation, have proven best for study. All the pathologic conditions from the beginning necrosis of single germinal cells to the disappearance of the center can be easily made out. With the disappearance of the germinal cells a nodule formed of phagocytic cells having some resemblance to a miliary tubercle appears. There is a tendency to fusion of the cytoplasm, the individual cell outlines are distinguished, with difficulty. There may be some remains of nuclear detritus, but usually with the formation of the phagocytic nodule this has all disappeared. I have not been able to clearly follow the disappearance of the phagocytic cells. There is no necrosis or it is not evidenced in the usual way. The cells fuse together into an indefinite, small, shrunken, reddish stained mass, in which swollen fibers of the reticulum which had not formerly been present appear. The capillaries in the centers disappear, probably by simple compression, their cells adding to the necrosis. The most marked changes are found in the large germinal centers of the tonsils. The necrosis here is massive and is often complicated by hemorrhage and fibrin formation. The phagocytic cells become involved in the common necrosis and their activity, so prominent a feature in the nodes elsewhere, is not manifest. There is no resemblance in the fate of the phagocytic cells to the caseation of tuberculosis. At no time do polynuclear leucocytes play a part.

During this process of germinal center destruction the nodes show evidence of marked activity. There is nearly always edema. Not only are the sinuses dilated, but the cells in the reticular tissue are separated from one another. The macroscopic swelling of the nodes seems to me due more to edema than to cell increase. There is no increase, but rather diminution in the number of small lymphoid cells. There is more or less destruction of these cells evidenced by fragmented and pycnotic nuclei. The cellular activity is in cells not normally present in the node. These cells vary so much in size and structure that no single description will apply to them. The most common type is a cell with a rough, irregular border, the cytoplasm not smooth and not definitely granular. There are no distributed granules similar to those in the granular cells. The cytoplasm has a tendency to the basophilic stain. The shape of the cell is round, oval or irregular. The nucleus in size corresponds to the cell. It is often placed eccentrically and two nuclei are occasionally seen. The nucleus is vesicular in type, the edge sharp, with one or several chromatin clumps in the interior. There is great variation in size of the cells, the average being about 10 microns with nuclei 7 microns. Very large cells up to 20 microns with nuclei 12 microns may be found. Nuclear division is active. With the appearance of the nuclear figures the cell cytoplasm becomes intensely granular, the granules varying in size. The cell is sometimes surrounded by a cloud of these irregular deeply stained granules which have seemingly been cast off from the cell. There are other cells which differ from these in that the cytoplasm stains more intensely blue, and others which closely approach the plasma cell type. I have occasionally found cells which can not be distinguished from myelocytes, both those with basophile and amphophile granules. All of these cells share in the mitoses. Eosinophile cells of the marrow type are also found. These cells are found everywhere in the node, in the reticular tissue and in the sinuses. They are rather more numerous in the lymph strands than in the convexity of the node. They may be scattered or in groups, the latter presenting some resemblance to a germinal center. I have occasionally found cells with a peculiar conformation consisting in a cap of intensely stained blue granules at one or both poles. The granular mass seems to be an addition to the surface of the cell, for it makes a distinct projection above the curve. I have never found such cells outside of the lymph nodes and know of no explanation for the appearance. The cells are numerous in the efferent lymphatics, in the hilus of the node and nuclear figures are found in them here. The cells in the sinuses often differ in having a more reticular cytoplasm with definite vacuoles around the periphery. They are also in the blood vessels, and I have seen them in the walls in the act of migration. The spleen usually contains great numbers of these cells around the follicles and in the pulp. Here also mitotic figures are numerous, and the cells are often in groups. Polynuclear leucocytes play no part in the process; they may be present in the sinuses in considerable numbers if there has been suppuration in the lymph territory of the node; they are usually degenerated and enclosed in phagocytes.

Phagocytic cells are present in the sinuses in great numbers, the sinuses may even be filled with them. There is no difficulty in distinguishing the phagocytic cells from the others, and no transitions are seen between cells of the lymphoid type and phagocytic cells. Nor can there be any doubt as to the origin of the phagocytes. They come from the endothelial cells lining the sinuses. Nuclear figures may be found in the cells attached to the sinuses and rarely in the free cells. Cells usually lymphoid are found enclosed in them. Apparently these cells are not always dead when ingested, as far as this can be determined by the appearance of the cell. The endothelial proliferation is not confined to the lymph endothelium. In all these nodes one is struck by the marked change in the endothelium of the vessels. The nuclei are large, closely packed together, and often lie with their long axes perpendicular to the lumen of the vessel. Nuclear figures are found in the cells and some of them appear in the act of detachment. Phagocytosis of lymphoid cells by the cells attached to the vessels may be seen. In the spleen similar changes may be seen in the cells lining the sinuses. Whether such newly formed cells originating from the en-

dothelium of blood vessels migrate and contribute to the number of phagocytes in the sinuses is undetermined. The ingested cells often appear in all respects to be normal and even nuclear figures may be found in them.

To sum up, we may say that in certain of the infectious diseases changes consisting essentially in necrosis and following proliferation take place in the lymph nodes. These changes, though they may be accentuated in regions, are general, affecting all the foci of lymphoid tissue. The necrosis is chiefly in the germinal centers, but in addition there may be destruction of the scattered small lymphoid cells. The necrotic cells are taken up by phagocytes, which are in part normally present, but their numbers are greatly increased by proliferation of the endothelial cells of the sinuses. The new formation of cells does not as normally or at least does not immediately lead to increase in the small lymphoid cells. The new cell formation seems to start from cells of an indefinite character resembling those found in the germinal centers. In part they seem simply to grow in size, retaining their characteristics, in part by change in cytoplasm and shrinkage of nuclei they become converted into plasma cells and cells may also be formed which can not be differentiated from myelocytes. Polynuclear leucocytes play no part in the process. When present they can be regarded as accidental and due to suppuration in the regional lymphatics of the node. The newly formed lymphoid cells enter into the blood in part by means of the efferent lymphatics, in part by migrating into the vessels. Such cells are found in blood vessels in all tissues of the body. They seem not so fully to be adapted to the blood movement as are the normal leucocytes. This may be due either to a difference in specific gravity or to the character of their cytoplasm. The normal leucocytes are cells with smooth surfaces, the polynuclear leucocyte certainly has on the outside a layer of differentiated cytoplasm constituting a species of cell wall. These cells have a rough, irregular outline. More of these are found in the capillaries of the liver than polynuclear leucocytes even in conditions of high leucocytosis as in pneumonia. They are found in great numbers in the vessels of certain organs, as in the kidney. From the vessels they pass by active ameboid motion into the interstitial tissue and may be found there in such numbers that the weight of the organ may be trebled. In the interstitial tissues the cells have a greater tendency to plasma cell differentiation than they have elsewhere and foci may be found composed of typical plasma cells. The cells have marked power of proliferation and nuclear figures are abundant. In the process of division the cytoplasm becomes more granular and granules are cast off. I have not been able to determine a relation between these foci and injury or degeneration of the tissue. The interstitial foci are more frequently found in the kidney than elsewhere. Next to the kidney they occur in the adrenal glands. The cells in the interstitial tissue in the necrotic foci of the testicle which are found in smallpox are of a similar nature. In animals I have found similar conditions only in the mouse, in which animal interstitial foci in the kidney are common. In the interstitial foci there is usually no accompanying infiltration with polynuclear leucocytes. I have seen bacterial foci with necrosis and polynuclear leucocytes and the interstitial foci in the same kidney with no commingling of cells. There may be commingling if bacterial infection or necrosis occurs in the same region with the interstitial foci, but the processes are independent.

In the normal tissues we have an analogous form of activity of the lymphoid structures. The lymphoid tissue of the alimentary canal has normally an action very similar to that which we have described in the lymph nodes. Such activity is found in all parts of the intestine and varies in degree. In the lymphoid tissue here the germinal centers are prominent and cell proliferation rapid. Phagocytic cells are prominent and always contain nuclear fragments. A part of the newly formed cells seem to become small lymphoid cells. Others give rise to cells of the types we have been considering. It must not be forgotten that, although nuclear division is more common in the least differentiated cells, it is also found in the larger cells and in the cells of the plasma cell type. The entire mucous tissue of the intestine may be crowded with these cells. The plasma cells tend to accumulate close beneath the epithelium. I have been able to acquire small pieces of mucous membrane from the surgical clinics which were removed in the course of operations requiring the opening of the stomach and intestine. Often some more or less obvious pathologic condition could be recognized in the tissue removed. The lymphoid infiltration in the stomach is more prominent in the pyloric than in the cardiac region. It varies enormously in degree. In certain lesions, as in ulcer and carcinoma, it was intense. In pathologic conditions the principal cells were plasma cells. I was surprised at the very small amount found in the stomach of a suicide. In the intestine the infiltration increases progressively, reaching its acme in the vicinity of the ileocecal valve and in the appendix. In many pathologic conditions there is an enormous increase in these cells; in others, as in tuberculous lesions, they may be entirely absent.

There is also analogy in the lymph nodes of the smaller mammals. The nodes of all the apparently normal guinea-pigs I have examined show a remarkable degree of activity leading to the formation of large cells. I have found such cells in the sections of blood vessels. The most remarkable degree of lymphoid activity I have encountered is in the follicles of the dog's intestine. Here the germinal center may occupy almost the entire area. It is crowded with nuclear figures and the phagocytic cells are numerous.

In the course of my work on the lymphoid structures it was necessary, of course, to study the blood and the bone marrow. Certain ideas as to the blood as a whole and the cytologic relation between the blood and the blood-forming organs have been forced on me. I do not think it possible at this time to construct any scheme of leucocyte formation which will not be largely hypothetical, and as a hypothesis I venture to produce this. But little can be gained by the study of the blood alone. It contains almost entirely cells which have undergone full differentiation and which enter the blood as completed products. As such we have the polynuclear leucocyte, a cell with high ameboid activity, with marked phagocytic powers for bacteria and utterly incapable of further differentiation and of proliferation. Under normal conditions they have a definite numerical equilibrium with the other cells. The type of the lymphoid cell as found in the blood with the small round nucleus with rim chromatin and slight cytoplasm I also regard as a completed cell incapable of further differentiation or increase. It is more ameboid than we generally think and is influenced by chemotaxis, but not to the same degree as is the polynuclear leucocyte. In regarding this as a cell in the same position with the polynuclear leucocyte opposition is encountered. Dominici regards

a cell identical with or indistinguishable from this cell as the primordial germinal cell of the blood. Maximov regards it as the cell from which his polyblasts arise. In the various cell schemes which the hematologists love to form and for the truth of which they are willing to fight and bleed and die, at least on paper, and which differ from one another chiefly in complexity, cells of the small lymphoid type figure as primordial cells. There is a mistaken idea as to the structure of a nucleus which is associated with proliferative activity. Relative to its size the nucleus of a proliferating cell contains but little chromatin. It is vesicular. Such nuclei are always found in rapidly proliferating cells whether in the embryo, in tumors, in regenerating tissue or in blood-forming organs. The evidence that the small lymphoid cell is an inactive cell lies in the character of its nucleus, in the fact that no nuclear division is ever seen in it, and that these are the cells in which destruction is most obviously taking place. No member of the lymphoid group of cells is phagocytic either for other cells or for bacteria. No cells are so constantly destroyed and removed by the cell phagocytes. The non-granular mononuclear cell of the blood, the so-called transition cell of Ehrlich, is phagocytic for other cells chiefly lymphoid and rarely for bacteria. It is an active cell and capable of division, but probably not of further differentiation. These are the three types of cells which concern us. The lymphoid cell under normal conditions is formed in the lymph nodes. The formative cell is the germinal center cell, the newly formed cells gaining the type of lymphoid cell by contraction of both cytoplasm and nucleus. The transition is short and does not take place by definite intermediate cell forms. The polynuclear leucocyte, however, has a much more complex formation. The primary formative cell for this is a cell with little differentiation and in its general characteristics resembling the germinal center cells of the lymph nodes. The polynuclear cells are formed from this cell passing through well characterized cell stages, in the first of which, the premyelocyte, the cytoplasm becomes abundant and indefinitely granular. The cell has some superficial resemblance to the plasma cell, but retains the active vesicular nuclear type. The myelocyte is formed from this cell by the differentiation of amphophile granules in the cytoplasm, and from this the polynuclear cell is directly formed. Mast cells and eosinophile cells are also formed by differentiation from the premyelocyte. Nuclear figures seem to me to be less common as differentiation proceeds. Nothing corresponding to the germinal centers can be distinguished in the marrow, and we at no place find the proliferative activity which is shown in the germinal node centers. If we consider the sum of the lymphoid tissue, it is much greater both in the child and in the adult than the sum of the myeloid tissue. That the myeloid tissue is capable of rapid and enormous increase in its activity is shown by the pyogenic infections. The eosinophile cells are formed by differentiation in the myelocyte series, but I do not think exclusively there. I feel sure that they may be formed in the intestinal canal and in pathologic conditions elsewhere. There is not a sharp separation of the two best marked varieties of leucocytes when we consider their histogenesis. The cell which can be regarded as the mother cell is practically the same for both. In the bone marrow it produces the myelocyte series, in the lymphatic tissues the lymphocyte series. It is the locality which determines. Even in the marrow there is some differentiation toward the lymphocyte series. It need not surprise us that under pathologic conditions there may be confusion in the process, that myelocytes may be formed in lymphatic tissue, and that the marrow may take on chiefly lymphatic activities.

I feel that I must make some apology for this paper in that it hardly touches on the questions which are uppermost. What concerns us now very much more than the questions of cell origin is cell function. What is the relation between lymphoid tissue and growth? Why is the lymphoid tissue most developed in the period of most active growth and why the decline in age? Why do we have the peculiar forms of activity which are shown in the intestinal canal? Why the constant association between active new formation of lymphoid cells and phagocytes which devour them? Why the association of lymphoid cells with the formation of tissue in which they can not take part? Why do certain diseases call forth such high degrees of activity in lymphoid tissues, while other diseases, such as tuberculosis, do not? Why should there be such differences in the amount of lymphoid tissue and in its proliferative activity in different animals? Have these cells any relation to immunity production? Those diseases in which activity is the most manifest are characterized by a definite immunity production, but I should hesitate to base any conclusion on this fact.

To all these questions I could contribute nothing but half-formed and indefinite ideas without a sufficient experimental basis. Toward the solution of some of them there must be more thorough study of the cell activity of the lymphoid tissue in different diseases, and for such study I make a plea.

MENINGISM AS DISTINGUISHED FROM MENINGITIS.

FROM AN OTOLOGIC VIEWPOINT.*

CHEVALIER JACKSON, M.D.
PITTSBURG, PA.

DEFINITION.

Meningism is a morbid state characterized by a meningitic syndrome without intracranial inflammation. Obviously the word pseudomeningitis, or false meningitis, can not be applied, as there can be no such thing as a false inflammation. The term "meningeal irritation" is defective, inaccurate, and anyway, can be applied only to a limited class of cases.

The name meningism has been applied by the French neurologists to several morbid conditions associated with a meningitic syndrome. None of these writers treat the subject from an otologic viewpoint. Dupré writes:

> In the course of some infections or intoxications, or certain morbid states less well defined (dentition, helminthiasis, etc.), of which the indirect influence is called reflex, there may appear, most often in young and hysteric subjects, a syndrome more or less closely simulating the picture of meningitis. The forms, acute or chronic, cerebral or spinal, of meningism, are of nice diagnosis, and of reserved prognosis; for, aside from the fact that the patient may die of meningism without meningeal lesions, the appearance of the syndrome, by indicating a particular vulnerability of the cerebral cortex, foreshadows the later possibility of a true and fatal meningitis. The pathology of these "accidents," inexplicable by the negative results of autopsies, seems attributable to an action exerted on a cerebral cortex, hereditarily predisposed, by poisons of

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

external, internal or microbic source. . . . The solution of the pathogenic problem is reserved to the technic of the future, which will demonstrate lesions invisible to dynamic pathology.

Pochon elaborated Dupré's work, but included also two additional classes: The toxic (alcoholic, phosphoric, uremic, etc.), and the hysteric, the toxic nearly corresponding to what some English and American authorities have classed as serous meningitis and pseudomeningitis, as of alcoholism. Rocca describes the variety associated with infectious diseases. While these and others have described the condition as seen by the internist, no exhaustive study of the subject from the otologic viewpoint has come to my notice. By this it is not meant that the condition is unrecognized. In his classic text-book Dench aptly says:

In children the diagnosis [of meningitis] is much more difficult, since any acute infectious disease or a disturbance of the gastrointestinal canal will give rise to exactly the symptoms above mentioned.

As every otologist knows we are often called on, as in a number of the cases reported herewith, to determine whether meningitic symptoms are due to ear disease or to the concomitant general malady. The frequency with which this problem arises in otologic differential diagnosis, it seems to me, justifies the nosologic independence of the morbid condition. With the object of urging the recognition, not so much of this name, as of some name for the condition, I present this study. The sooner the morbid condition is allowed a place in nosonomy, the sooner will its pathology and diagnosis be developed.

Diffuse infective purulent leptomeningitis almost invariably ends fatally. A few preëminent operators like Dench, Jack, Macewan and others have reported authentic cases, but these are so rare as to prove the rule as exceptions. In an enormous experience Dench has seen but a single case. To operate on a patient who will certainly die is to discredit otology, and prevent or delay consent in other and operably curable cases. To operate on a child whose symptoms are due not to an extension of its ear disease, but to the toxemia of an acute infection, is to make a grave mistake. To fail to operate on an operably curable mastoid or a middle ear disease which is producing grave symptoms is a fearful error.

Now when it is admitted, as all experienced otologists will admit, that all of the assident, and many of the considered pathognomonic signs of meningitis may be present in the absence of intracranial inflammation, this condition, call it meningism or what you may, merits closer study than it has ever yet received. It is my hope that this paper, which is chiefly clinical, will incite the interest of others better able to solve the problems, especially those of its pathology, which seem particularly obscure. Much work also remains to establish a more certain basis for early differential diagnosis.

I am by no means certain that some of the cases I have classed as irritative meningism were not serous meningitis, but there is no evidence, clinical or pathologic, that cases of this kind are associated with serous infiltration or exudation, and it would seem better to acknowledge our ignorance of their pathology and class them clinically under their syndrome. In regard to the toxemic variety there can be no question as to the absence of a serous exudate or any discoverable lesion, and to class such cases as pseudomeningitis is a misnomer.

Fulminating cases of epidemic cerebrospinal meningitis have occurred where no macroscopic or microscopic lesions other than intense congestion were discoverable at the autopsy. This casts serious reflections on the pathologic research of the day and caused me some hesitation in urging the recognition of a name for a condition based on failure to discover a lesion. In these fulminating cases death is due probably to overwhelming doses of toxins, and would later develop inflammation if the patients lived. Yet this does not lessen the necessity for study in an effort to recognize another condition in which toxemia or other factors produce symptoms, but do not later end in inflammation.

Hyperemia probably exists in some cases of meningism, and it may be argued that hyperemia may be considered the first stage of inflammation and that this justifies calling these cases meningitis, but a passive meningeal hyperemia is no more a meningitis than is the climacteric flush a dermatitis.

VARIETIES.

The cases which I have observed may be conveniently classified, clinically and pathologically, under three heads, irritative, toxemic and reflex. It must not be inferred that these varieties are always distinct, as two or all may coexist.

ETIOLOGY.

Predisposing Factors.—In his paper which deals with the meningism of acute diseases, dentition, etc., Dupré lays great stress on the abnormal vulnerability of the cortical zones. In some instances he considers previous attacks of meningism as factors in increasing vulnerability to a point where they may be contributory etiologic factors in meningitis. A neuropath, as in Cases 8 and 13, must of necessity be more susceptible to meningism than a normal person.

Neuropathic heredity, as shown in nearly all of my cases, is frequently a predisposing factor in vulnerability.

Nerve cell "habit" is a factor in vulnerability. Its influence in the nosogeny of the erethismic phenomena, especially of the convulsions, seems certain. Nerve cells which have a number of times discharged, as in a convulsion, naturally are more readily influenced again in a like manner.

Hysteria and other neuropathic antecedents are likewise etiologic. All these are shown in my case reports.

Age is an important predisposing factor. Of 62 cases, 50 (81 per cent.) patients were under 12 years of age. Adults, however, are not exempt, especially neuropathic individuals, as frequently seen in severe typhoid fever cases, and as shown in one of the appended cases. Sex is also a factor. Of the 62 cases 48 (80 per cent.) patients were females.

Exciting Factors.—Irritative Cases: Traumatism, as from operative work (especially if rough), corrosive solutions, as mercuric chlorid, in cases in which the brain or meninges (even if only the dura) are exposed, are factors. This often follows work on the venous sinuses, as shown in Cases 1 and 2. It is a frequent error, and one I committed myself in my earlier work, to make too much pressure in applying the dressing in obliteration of the cerebral sinuses. Very little pressure is required.

Toxemic Cases: As shown by my cases and as recognized by internists and pediatrists, these may be excited in vulnerable individuals by the toxins of almost any acute infectious disease, as the exanthemata, typhoid fever, pneumonia, acute rheumatic fever, malarial fevers, gastroenteritis, colitis, etc. Toxemia, of course, may be favored by uremia, faulty metabolism or defective elimination.

Reflex Cases: Helminthiasis, as in Case 8, and dentition, as in Case 11, are factors.

The etiology of "meningisme pyretique" of the French authors is explained in the name, whatever theory as to its pathologic mechanism may be adopted. Obviously, the influence of the temperature *per se* can not be separated from the influence of the toxins proceeding from the same basic cause as the temperature itself. The etiology of any given case doubtless may partake of any one or all of these factors.

PATHOLOGY.

Because of the rarity of autopsies, the pathology must be deduced from clinical observations of living tissues and of symptoms. This is a very unsatisfactory pathology, and yet from the very fact that recovery is the usual criterion of a non-inflammatory condition, autopsies must be rare.

The pathology of some cases may be similar to that of a functional neurosis, which has no anatomic basis. Like a neurosis it is subject to reclassification, as refinements of pathologic research shall demonstrate that some of the cases are due to then recognizable lesions. Much light would be shed on the pathology of meningism if it had a perfectly satisfactory conception of the pathologic mechanism of those fulminating cases of cerebrospinal meningitis which are fatal before any microscopically discoverable lesion is produced. As to the site of the pathologic influence, it is very certain from analogous symptoms that result from actual lesions in other diseases, that the cortical and subcortical cells are influenced as well as the meninges.

Pathologically, cases of meningism may be classified under three heads: 1. Toxemic meningism, and 2, reflex meningism, in both of which there are absolutely no discoverable lesions. 3. Irritative meningism, in which there is a non-infective hyperemia without leucocytic migration or serous exudation. In the irritative class may be placed those cases seen by every otologist, in which an acute otitis media in children produces marked meningitic symptoms, which clear up promptly on incision of the drum membrane. To quote Dench:

> In children, when the tympanic roof is exceedingly thin, it is not improbable that the meninges in the immediate neighborhood are congested; but the process stops here, and true meningitis is not developed.

One autopsy exemplifies this, Case 3.

Irritative meningism is also seen in cases in which the cerebral membranes have been subjected to rough handling, to the contact of strong antiseptic solutions and to similar irritations. These irritations have been noticed doubtless by all otologists, and are exemplified in Cases 1 and 2. That there is a zone of cortical irritation around the site of a brain operation, especially the kind of brain operations the otologist is constantly doing, seems plausible, the state probably being one of increased circulation, and of direct influence on cells adjacent. In this class of cases the meningeal congestion is often apparent to the operator's eye on the living subject. If the case is one of meningism, this increased vascularity does not reach the stage of exudation or leucocytal migration. The influence of operative trauma on the cortical cells, independent of, or in the absence of, increased vascularity, is probable.

An increase in the amount of the normal lymph in the pial spaces, or a slight pial edema might escape notice at an exploratory operation or at an autopsy. Then, again, it must be admitted that in the absence of organisms their toxins may excite a degree of congestion bordering on or possibly reaching inflammation. Some of the cases in which the meningitiform symptoms are bilateral may be thus accounted for by the effect of nosotoxins in the circulation, derived from either the purulent otitic focus or from a general malady of which it is the complication. The chemistry of the future will isolate from the tissues, or more palpably from the fluids, of these cases, a toxin whose action is productive of meningism, just as strychnin produces its characteristic phenomena.

The most marked of my own cases of the irritative form of meningism have occurred after operative work on the venous sinuses of the brain. In addition to the irritation of operative manipulation, it is probable that there may have been some venous stasis, due to obliteration of the large venous channel, resulting in a slightly increased quantity of ventricular fluid. This, however, does not constitute a meningitis, serous or other, for not only are there no pyogenic organisms or pyogenic processes, but there is no inflammation, either at the site indicated by the symptoms, or elsewhere. In these sinus operations cerebral anemia from hemorrhage, shock and collapse, vasomotor paresis of the general or cerebral circulation, are all potent factors, the influence of which, direct and reflex, has never been exhaustively studied.

Toxemic and reflex cases, it must be confessed, have no lesions that are demonstrable by the laboratory technic, macroscopic or microscopic, of to-day. In other words, these cases have no anatomic basis. It may be argued that if toxins act on the cortex they produce at least temporary lesions, be they ever so evanescent. On a moment's consideration, however, we will remember that drugs acting on the cortex produce the most marked phenomena without demonstrable structural or even circulatory change apparent at autopsy. In regard to the pathology of the fatal cases of toxemic meningism, it is not unreasonable to assume that overwhelming amounts of nosotoxins may prove fatal just as cerebral poisons may, and this without microscopically demonstrable lesions.

In an acute infectious disease, with or without ear complications, the nosotoxins acting on the cortical or subcortical cells may produce somnolence, stupor, if not coma, the clinical aspect differing in no way from the same phenomena resulting from the inflammatory products of meningitis, or the exudates of the so-called serous meningitis. The phenomena are probably due also to circulatory changes in the central nervous system induced by nosotoxins in the fluids and in the blood. These changes may be in the form of stasis due to active congestion, initial to acute disorders of childhood or ischemia incident to wasting disease, as cholera infantum. The prompt relief of symptoms by small doses of morphin points to the importance of circulatory changes in the pathology of meningism.

Reflex meningism even more certainly than toxemic meningism may be looked on as without lesions, or at least as having lesions which must be left to the refined pathologic technic of the future to demonstrate. That reflex influences may have profound and even fatal effects on the sensorium is well known. With both the toxemic and reflex forms, in the absence of autopsies, and of the clinical observations of paralysis, pressure and depressive symptoms, I do not see any grounds for the assumption that such cases should be classed with serous meningitis. In regard to the pathology of the convulsive and other phenomena of high temperature, the "meningisme pyretique" of the French, but little is really known,

though plausible theory is not lacking. The same may be said of the occurrence of optic neuritis in the toxemic or reflex meningism of acute otitis media. As to the pathology of the optic neuritis noted in one instance, I have nothing to offer. As all know, this has been noted in acute otitis of children, without any really satisfactory demonstration of its nosogeny.

SYMPTOMATOLOGY.

In general, it may be stated that any or all of the early symptoms of meningitis may be present in meningism. The late symptoms were only present in four of my cases. The symptoms are those of cortical erethism, not those of cortical depression. All of the symptoms may be modified and intermingled with those of the intercurrent malady. An initial chill was noticed in a few of my cases, but was probably present though unnoticed in many of the others. Convulsions were noted in thirteen cases, usually not repeated. In some of the cases doubtless the convulsion may have been due in part or wholly to the high temperature. In one case it was due to postoperative cerebral anemia, and in another to stasis following operative obliteration of the lateral sinuses. Vomiting was constant, being noted in 48 cases. Paralyses were not noted in any instance, the nearest approach being pupillary phenomena, and these were more likely erethismic than paralytic, probably spastic miosis. The strabismus noted in 3 cases was probably the manifestation of latency. Loss of sphincteric control in children is not necessarily paralytic, and incontinence of urine and feces occurs without sphinteric paralysis. Anesthesias were not demonstrated, though they were only searched for in a few instances. Coma was notably absent, the nearest approach being stupor, which was present in 5 cases, nearly all cases of the toxemic variety. Persistent stupor was present in some of the toxemic cases, and stupor was reached in a few instances, but absolute coma was not.

Temperature: The temperature was usually constantly elevated, the maximum being 105.2. Remissions occurred in some instances. In other instances it was modified by an intercurrent disease, and by spongings. Nothing characteristic was noted. Doubtless further observation will accumulate valuable data. In general, it may be said that the temperature was that of meningitis, though usually of lower range. This can not, however, be considered characteristic, as of course we all see meningitis with moderate temperature elevation.

Pulse: The pulse may be said to have been rapid in proportion to the temperature, and to have been comparable to that of the early stages of meningitis. In no instance was it indicative of pressure. Nothing characteristic was noted.

Respiration: This seemed to follow the pulse and was arrhythmical only when interfered with by convulsive and spasmodic phenomena. Constipation was present in a number of cases. Vomiting was present in most cases.

Cephalalgia: Cephalalgia was a practically constant symptom. It was referred in most instances to the frontal and temporal regions. When monolateral it was referred to the side of the affected ear, but even in monolateral ear cases it was in most instances bilateral. Rarely was it limited to the occiput. Hyperideation was doubtless present oftener than noted. Vertigo was noted a number of times, but its presence in children is not always easy to determine. Delirium was an almost constant symptom.

Jactitation: This was present in many cases. Case 1 is typical of this. Fibrillary movements were noted in a few instances.

Spasms: Spasms were present in the severe cases, tonic in some, clonic in other cases, monolateral in several instances. Trismus was noted once. Grinding of the teeth was noted a number of times.

Nuchal Rigidity: This was one of the most common symptoms and was usually indicative of the toxemic variety.

Photophobia: Photophobia was often present, but whether only apparent, due to irritability of temper, or to normal sensitiveness following almost constantly closed lids, was not determined. Other hyperesthesias as of the general surface were noted in a few cases.

Tache Cerebrale: This was absent in the cases tested, though it was not searched for in every case. Aphasia was present in one case. Kernig's sign was present in four instances.

PROGNOSIS.

The prognosis is favorable, provided the condition be not the forerunner of a true meningitis. In view, however, of our inability to differentiate these cases, the prognosis must necessarily be grave. The meningitic syndrome initial to the acute febrile diseases of childhood is not of grave prognosis in itself, but only as indicating the severity of the basic disease. If, in a given case, the syndrome is due to the basic disease and not to the ear complication, the prognosis is evident. In medical meningism, Dupré, Belfanti, Auscher, Herge, Claisse, Sollier and others cite fatal cases of meningism without discoverable microscopic or macroscopic intracranial lesions. Some of these authors also consider the occurrence of meningism indicates a vulnerability of the cortex, which foreshadows the possibility of the condition later developing into a true meningitis.

DIAGNOSIS.

The diagnosis of meningism must be considered from two viewpoints: First, the differentiation between meningism and a true meningitis. Second, as to whether the meningism is due to the basic disease or to the ear complication, the etiologic diagnosis.

When meningism occurs in a case of ear disease complicating acute disease, otologists should be able not only to make a diagnosis of meningism, but to differentiate as to whether it is due to the otitic or the general malady. That we are rarely able to do this until late, indicates the necessity for study of this condition. The most positive diagnostic point is the recovery of the patient who has had the meningitic symptoms. Unfortunately, however, this almost pathognomonic sign is not available at the time most needed. Patients with serous meningitis also recover, but this usually can be excluded as hereinafter indicated.

Changes in the fundus oculi are usually late, but are of value if positive, indicating meningitis, or at any rate intracranial lesion. If negative they are valueless, and it must not be forgotten that optic neuritis has been observed in acute otitis media, in the total absence of intracranial symptoms. In one of my cases of irritative meningism, Dr. Glendon E. Curry found paleness of the discs, haziness of the retina with capillary congestion, but no engorgement of the larger vessels.

Lumbar puncture, with subsequent microscopic examination, in meningitis is only of value diagnostically when positive, and it is only positive so late that the diagnosis is readily made from the symptoms alone.

The tache cerebrale was absent in all of the 62 cases observed.

Of the 62 cases, in only 8 was a blood examination made. In these 8 leucocytes were increased, but, as pus was present, the value of leucocytosis diagnostically is not yet determined. An exhaustive blood investigation in all its refinements promises much diagnostically, as well as pathologically.

In making a differential diagnosis between the varieties of meningism, the irritative form will be shown by monolateral erethismic symptoms, and will be found after monolateral operative or other traumata. The toxic and the reflex forms will be found in conditions in which a source of toxins or of primary reflex irritative cause can be found and the erethismic symptoms are usually bilateral. The toxic may co-exist with either of the other forms.

While in the early stages of a serous or a purulent meningitis we may be unable to make a positive diagnosis, a stage comes later when a negative diagnosis is readily made. This is marked by the onset of pressure symptoms, paralytic phenomena, anesthesias and true coma. When these appear meningism is usually excluded. Later still, we have further negative evidence in the respiratory disturbances, first those of intracranial pressure and later the arrhythmic phenomena of the periodic type, often the Cheyne-Stokes kind, which forecasts impending dissolution.

While it is possible to have this series of symptoms follow an overwhelming dose of nosotoxins in toxic meningism, it is so rare that we will usually be safe in expecting to find intracranial lesions when paralytic and localized anesthetic symptoms have been present. Absolute coma may be toxemic, but in the class of toxemic cases we are considering it is rare. In acute nonsuppurative encephalitis the cortical depressive symptoms develop early.

A diagnostic point of much value as between meningism and meningitis is the quieting action of comparatively small doses of morphin on the erethismic phenomena in meningism. Much larger doses are required in meningitis.

Epidemic cerebrospinal meningitis intercurrent with a preceding chronic purulent otitis occurred once in my experience and was diagnosticated only after the rash appeared. Meningism was previously excluded on the appearance of cortical depressive phenomena.

A neuropathic personal history, with hereditary and somatic stigmata and a neuropathic family history, points to meningism, but does not exclude meningitis. A history of initial convulsions and delirium with previous illnesses, for instance in the exanthemata, should put us on our guard against making a diagnosis of meningitis until paralyses appear.

In the acute infectious diseases of childhood the characteristic symptoms usually develop promptly to clear up the diagnosis, as the meningitic syndrome recedes, if the case be one of meningism. This short duration of the meningitic syndrome is a valuable diagnostic point. If the syndrome persists it points to organic disease.

The toxemic meningism seen in the exanthemata is usually initial and of short duration. When nuchal rigidity persists longer than 48 hours, we may in most cases look for graver intracranial developments. In acute otitis media if nuchal rigidity with pyrexia and headache persist unabated for 48 hours after a proper myringotomy, meningism is less probable than meningitis.

In a case of suppurative ear disease, especially of the chronic form, the headache, acute delirium, vomiting and convulsions, ushering in a fulminant attack of an acute intercurrent infection, as typhoid fever, influenza, pneumonia, etc., are often of difficult early diagnosis. A little time for the development of the characteristic symptoms of the intercurrent malady will permit of a diagnosis from the suggestions here given.

Toxemic meningism can be eliminated from the diagnosis, in some instances by the use of drastic purgatives, especially calomel. Care must be taken here, however, to guard against error. The subject of a true meningitis, as well as another, may suffer from autotoxemia; indeed, he is even more likely to suffer thus, because of his constipation and his defective elimination, due to disordered innervation. I have frequently urged this point, especially in connection with brain abscess.

In a monolateral suppurative ear case the sudden onset of bilateral and general symptoms of intracranial involvement without a prior monolateral stage may mean infective leptomeningitis, with infection of the cerebrospinal fluid, or it may mean only toxic meningism. Of course, monolateral symptoms in infective meningitis later become bilateral by extension.

In the gastrointestinal diseases of children the history of preceding attacks and the short duration, together with the gastrointestinal symptoms, point to the cause of the meningism.

In "meningisme pyretique" the symptoms recede with the temperature recession and reappear with the exacerbation, and no cause for the meningitic syndrome other than the hyperthermia is found.

Tuberculous meningitis can, I think, be excluded on the duration of the attack, the history of previous attacks, and its insidious onset, usually without convulsions. The coincidence of an acute otitis media in a child, with early tuberculous meningitis, once led me into error. No previous history was obtainable because of the prior death of both parents. I found well-developed tuberculous lesions at my exploratory operation. The child recovered promptly from the operation and the otitis, but died six months later of meningeal and mesenteric tuberculosis.

In older children hysteria is a possible source of error in diagnosis, especially when it manifests itself in the course of a febrile disease with an ear complication. The history of previous hysteric attacks, inversion of the phosphates, loquacious delirium, with distinct statements, instead of incoherent mutterings, all mark hystericism. In one of my cases hysteria was diagnosticated on the sole observation that the strabismus was double convergent. In another case pyrexia from acute otitis media deceived me until the meningitic symptoms were noticed to follow my ear examinations, subsiding in the interval, and that no symptom beyond volition was present. Some French neurologists nosologize a "meningisme hysterique."

Uremia and other toxic comata may be excluded diagnostically by the well-known signs. These cases could be admitted nosologically as toxic meningism, but it would seem better to leave them in their present class.

TREATMENT.

The prophylaxis of the irritative form includes the careful handling of the meninges in operative work, the avoidance of irritative solutions and of undue pressure after exploration of the cerebral sinuses. But little pressure is needed. When stimulants are required for post-

operative shock after sinus operations, strychnin should be avoided, especially as it is by no means the best stimulant anyway.

Rest and absolute quiet in a darkened room are essential. The ice bag to the shaved head is grateful and is of benefit. High temperature, whether the cause of the meningism or not, is to be combated by sponging.

In toxemic cases prompt and energetic stimulation of elimination yields prompt results. A brisk calomel purge, followed by salines and vigorous diuretics and diaphoretics, are indicated. No food should be given, as it is not absorbed and its decomposition yields toxins. If the source of the toxemia be an acute otitis media, I deem immediate termination of the acute otitis by posterior drainage through the mastoid imperatively demanded, even though the mastoid be uninvolved. This I urged strongly two years ago. To wait for mastoid symptoms in such cases is a disgrace to otology. The symptoms of the irritative and reflex varieties are quieted promptly by morphin, though there are objections to its use on account of its masking the symptoms, causing vomiting, etc., and in the toxemic cases it has the additional disadvantage of checking elimination of not only nosotoxins, but of the ordinary autotoxins, which are, of course, injurious, whether they are a factor in the case or not. In the reflex form, if the source of the efferent irritative impulse is known, its removal is obviously the first step.

CASE REPORTS.

Many of the following reports are incomplete, because of meager notes taken before the importance of the subject was recognized. Obviously, time forbids a full report of all of the 62 cases; only typical ones are selected. It is unnecessary to include the many instances of the type often seen by otologists, in which a meningitic syndrome disappears after myringotomy.

CASE 1.—*Irritative Meningism, following Operative Lateral Sinus Obliteration, with Jugular Exsection.*

History.—G. M., aged 9, female. Family history included asthma and insanity, terminating in suicide. Patient developed a large mastoid abscess following a right chronic otorrhea of some years' duration. Temperature and pulse were normal.

Operation.—With the assistance of the family physician, Dr. C. H. Ingram, and Dr. W. H. Strang, I opened the right mastoid. A large collection of foul pus was found under the periosteum, and there was a gap in the cortex filled with exuberant granulation buds which sprung from the dura over the sinus at the knee. All diseased bone was removed and about an inch of the sinus laid bare. Incision of the sinus showed it to be filled with septic clot of very foul odor. The external jugular was ligated and exsected from the clavicle to the parotid gland. The sinus was then cleaned out to the jugular bulb and backward to the torcular, where a free flow of blood was obtained, the bone being removed for the entire distance, and the sinus being slit open and packed with iodoform gauze, and dressings being applied in the usual manner. Temperature, 97.1; pulse, 140, and weak.

Postoperative History.—After operation the temperature rose to 100, and the following day 102.2 was reached, the pulse rate remaining about the same, 140, but stronger. On the second day the pupils were widely dilated, equal, and they responded sluggishly to light. Photophobia was marked. Patient became very restless, cried out when touched, and both the conjunctivæ and the skin were of icteroid hue. Patient answered questions clearly when pressed, but was exceedingly irritable, and kept saying, "Let me alone." Temperature, 103.4, pulse 146. Patient vomited once, retched several times, complained of headache, would grind her teeth, and also cry out in sleep, waking at times with a start.

On third day the dressings were changed, and wound found in the best possible condition; drainage stains were icteroid. There was active delirium, with frequent crying out, muttering at times. Patient could be roused and attention fixed for a moment. Kernig was present, together with spastic rigidity of the legs, with feet in "pigeon-toed" varus position. Eye examination by Dr. Glendon E. Curry showed "slight divergent strabismus, patient too stuporous to test the extraocular muscles, both pupils dilated, right responding to light stimulus, the left fixed. Media clear, discs pale, retina slightly hazy throughout, capillaries congested, larger vessels not engorged." Temperature, 103.1; pulse, 142.

On the fourth day jerking of the right arm and hand was noticed, becoming more and more marked, jerking upward until the hand almost touched the face. In the afternoon the right foot began to jerk occasionally, and often the foot and hand would jerk at the same time. She could not readily be roused to consciousness, yet actual coma was not present. Urinations and evacuations were involuntary. Knee jerks were exaggerated. Temperature, 103.5; pulse, 138.

On the fifth day condition was the same. Wound was dressed and found clean. The diagnosis of both myself and Dr. Ingram was infective leptomeningitis, prognosis unfavorable. Both of these would, I am sure, have been concurred in by any otologist had he seen the case. Morphin, gr. 1/16, was given hypodermatically, which quieted the patient promptly. The symptoms began to lessen in severity, and on the sixth day she asked for water, but seemed dazed, and on the seventh she recognized her father. Recovery was uneventful.

That this case was not infective leptomeningitis is evidenced by the recovery. That it was irritative and not toxic is evidenced by its monolaterality. That the cortex participated seems certain from the symptoms. There seems to be no basis for assuming this to be a serous meningitis. It is noteworthy that the child was neuropathic and that the family history included asthma and insanity.

CASE 2.—*Irritative Meningism following Operative Obliteration of Lateral and Sigmoid Sinuses.*

Patient.—M. K., aged 9, female, American, emaciated and septic, was sent to me by Dr. C. J. Stybr for operation, with a diagnosis of "pus in the left mastoid, with probable intracranial complications."

History.—There had been a left chronic otorrhea since typhoid fever four years previously. There were no ear symptoms other than otorrhea one month prior to operation, when Dr. Stybr was called to see the child in convulsions following vertigo. There had been no chills, sweats, or temperature exacerbations, so far as known, though as Dr. Stybr had been called but twice, once four weeks before, and again one day before operation, this part of the history is uncertain. Temperature, 103 F.; pulse, 120.

Operation.—Chloroform was carefully administered by Dr. Stybr, and with the assistance of Dr. Ellen J. Patterson, I opened the mastoid. There was no perforation of the cortex, but as soon as this was chiseled through, foul pus was found in every direction in the mastoid cells. The inner table was found eroded away over the vertical portion of the sigmoid sinus, the gap being crowded full of black gangrenous looking granulations, of foul odor, springing from the dura. The gap in the inner table was enlarged in every direction with the rongeur, the flakes lifted from over the lateral sinus and knee showing black from chromogenic bacteria.

The dura around the black mass of granulation buds was dark crimson, fading to normal only when the sinus had been uncovered back to the torcular. This area of pachymeningitis was bathed in foul, greenish pus, constituting an extradural abscess, which was followed in every direction until the dura was found only injected. Pus oozed from the mastoid foramen when the periosteum was elevated. The sigmoid sinus was uncovered down to the jugular bulb. The bone being softened all the way, broke down under the curette like honeycomb under a spoon.

Palpation revealed that the sinus was soft and boggy at the knee, but very firm, almost cord-like, below that point. The sinus was split open by an incision about 2 cm. in length. A firm, organized clot was found to have occluded the lower

sigmoid and the jugular bulb. This seemed so firm and healthy that, in view of the extremely bad condition of the patient, it seemed wiser not to disturb it, but to leave to Nature the finishing of what she had so well begun. The lateral sinus was slit up backward until the curette could reach the torcular. This brought a free flow of blood, when the sinus was packed with iodoform gauze.

The patient's condition was so very bad that it was deemed unwise to keep up anesthesia even the 15 minutes longer that would have been required for the exsection of the jugular, especially as it seemed probable that the lower end of the organized clot was not infective. The wound was quickly cleansed and packed with iodoform gauze, and a dressing applied. Patient was put to bed with raised foot and an enema of very hot salt solution given. She rallied fairly well, considering her weak, septicemic condition, and now an opportunity to study her symptoms was afforded.

Symptoms.—Eye examination by Dr. Curry showed photophobia and slight divergent strabismus, fundus negative. There was a marked amnesic aphasia. For instance she would say: "I want—up there," or only, "I want," pointing to a glass of water, of which, when given, she would drink eagerly. All nouns seemed forgotten; she could not even say "Mamma," though at times she would recognize and cling to her mother.

Jactitation was marked, asleep or awake. She was delirious when sleeping, but at times seemed clear when aroused. She would start up and cry out. There were tonic spasms of right arm, rigidity of the neck, and occasional choreic movements in other groups of muscles. She said she could not see, but this was probably vertigo. When raised, she always fell to the left. She was constipated and the urine was scanty, totally suppressed for 24 hours. After operation, temperature 100 F., pulse 160, respiration 30. The temperature rose to 103.2 F., pulse fell to 118.

Dressings were changed on the third day and the wound was found clean. At the end of a week strength increased and cerebral symptoms gradually subsided.

CASE 3.—*Irritative Meningism from Blow on Head.*

History.—J. S., aged 15, male, whose family history included paralysis agitans, convulsive tic and alcoholism, had left chronic suppurative otitis of 7 years' duration following influenza. Mastoid was said to have been operated at that time, but discharge from canal never ceased. Blow from a baseball bat over left mastoid three days before I saw him was followed by a chill, vomiting, headache, delirium, vertigo, aphasia and clonic spasms of right foot. Temperature 100, pulse 120 and soft. The mastoid region was swollen and ecchymosed.

Operation.—I advised immediate operation, but found no disease of the bone except a slight necrosis of the posterior walls of the antrum and outer wall of the aditis. The inner table was not diseased, and there was no fracture. Not feeling satisfied I removed the normal inner table throughout the mastoid wound and then also trephined through an independent scalp flap over the motor area, afterward enlarging the bone wound with the rongeur until I exposed about 6 sq. cm. of dura. The dura was congested, but nowhere was there any sign of actual inflammation, of thickening or exudation. The scalp flap was replaced and stitched, and a dressing was applied. Then the mastoid operation was completed by the radical method.

The meningitic syndrome subsided as if by magic, evidently by the depletion of the operative hemorrhage. Scalp and postaural wounds healed *per primam* and the boy made a good recovery, not only from his irritative meningism, but from his chronic ear disease.

CASE 4.—*Meningism in a Case of Mastoid Empyema, complicating Measles, preceding Bronchopneumonia. Operation. Absence of meningitis. Recovery.*

History.—J. B., aged 2, male, gave negative family history. Patient has Morel's ear.

Operation.—I operated for acute mastoid empyema, following otitis media complicating measles. Dura not exposed. Postoperative temperature, 100 for two days, when it rose to 104; pulse, 130; respirations, 40. Chill, vomiting, headache, convulsions, nuchal rigidity, photophobia, followed in quick succession. My diagnosis of infective leptomeningitis was changed to toxic meningism, when the attending physician, Dr. J. B. Crombie, made out a bronchopneumonia.

CASE 5.—*Meningism due to Pneumonic Toxins. Mastoid operation. Recovery.*

History.—Family history included fatal singultus, lesion unknown. Patient had cleft palate. Myringotomy on the sixth day of measles, evacuated pus, on the tenth day pneumonia, when temperature 104, pulse 130, respiration 48, developed. On the thirteenth day a convulsion was followed by increasing delirium, photophobia, ocular suffusion of the measles having previously subsided; nuchal rigidity, encephalic cry, twitchings of the muscles of all four extremities impartially. Pupils were normal.

Operation.—I advised immediate mastoid operation in the absence of mastoid symptoms. Under local anesthesia by Neuman's method I opened an antrum containing pus and granulation tissue. The other mastoid cells being normal, and the inner table seeming sound everywhere exposed, and considering the pneumonia, the local anesthesia, and especially the bilateral character of the meningitic syndrome case, with monolateral ear disease, I considered further exploration unjustifiable.

In 48 hours all symptoms but those of the pneumonia subsided.

Reviewing the case, I think the meningeal syndrome was toxic due to pneumonia, though other interpretations are tenable. The mastoid wound healed in four weeks and, in my opinion, the operation was justifiable as promptly terminating the otitis media before development of possible serious complications.

CASE 6.—*Toxemic Meningism due to Otitic Toxins; Possibly also to Irritative Reflexes from Pressure.*

History.—O. M., aged 2, female, had acute otitis media following whooping-cough. There had been a convulsion, nuchal rigidity was marked, and there were vomiting, constipation, muscular twitchings, and the hydrocephalic cry. These symptoms were noted by Drs. W. P. McCorkle, W. M. Campbell, and H. E. Clark, all able clinicians. When I saw the case the drum membrane had ruptured, pus was flowing freely, the symptoms were abating, and they disappeared in twenty-four hours from their onset. A mastoid operation was required a week later, but there was no return of the meningitic symptoms.

CASE 7.—*Laryngeal Diphtheria, Otitis Media Acuta, with Cerebral Symptoms. Death from Asphyxia. Autopsy.*

History.—J. T., aged 4, male, had laryngeal diphtheria, undiscovered and untreated until the third day. Intubation and antitoxin. On fourth day the symptoms were nuchal rigidity, vomiting (even with tube out) heterolateral twitching of arm and leg, pupils dilated and sluggish. In the evening profuse serosanguinolent discharge from right ear was followed by subsidence of all signs of cerebral irritation. Death occurred on the fifth day from asphyxia. The child had coughed up the tube, unnoticed by the mother.

Autopsy.—Autopsy showed slight congestion of the meninges over the tegmina tympani et antri of the affected ear. It is probable that at the time the meningitic symptoms were noticed the congestion extended farther. There were no signs of actual inflammation, nor of a serous exudate or infiltrate. Bacteriologic examination of fluid from the pial spaces at the congested area was negative.

CASE 8.—*Reflex Meningism due to Helminthiasis.*

History.—M. L., aged 8, female, gave a family history of hysteria, neuralgia, diabetes, and a personal history of chorea. Right foul purulent otitis media since scarlatina, 3 years. Patient was anemic and emaciated, supposedly from absorption.

Symptoms.—Cephalalgia, convulsion, vomiting, vertigo, clonic spasms resembling chorea alternately in all four limbs without selection, also of the nuchal muscles. Temperature normal, pulse normal in rate and tension.

Diagnosis.—As consultant I was inclined to exclude an ear complication on the perfectly normal pulse tension and choreic nature of the nuchal rigidity. On my tentative diagnosis of toxemic meningism the attendant gave a brisk calomel purge, which to our surprise brought away all but the head

of a large tenia mediocanellata. The symptoms all subsided at once and our diagnosis was changed to reflex meningism.

CASE 9.—*Reflex Meningism due to Dentition.*

History.—R. K., aged 18 months, male, whose family history included dementia and epilepsy, had had chronic suppurative otitis media since measles at 6 months.

Symptoms.—Convulsion, vomiting, trismus, constipation, nuchal rigidity. Temperature, 102. No signs of mastoid involvement. On incision of the gums over the anterior molars all symptoms promptly subsided.

CASE 10.—*Hysteria Simulating Meningism or Meningitis.*

History.—L. L., aged 17, female, had no somatic stigmata. Family history on both sides neuropathic, including asthma, neuralgia, diabetes, dementia. Patient had had right chronic suppurative otitis media since measles in infancy. Radical operation advised but refused. Patient heard and brooded on dangers of otitic brain trouble and read all available literature on the subject of meningitis. Operation refused by parents until superimposed mastoid empyema complicating la grippe occurred two years later.

Postoperative History.—Following radical operation, which did not expose the dura at any point, headache, persistent vomiting, nuchal rigidity, delirium, crying out, convulsions, jactitation and photophobia caused me great apprehension until I noticed that the eyelids were both tightly shut by the orbicular muscles; that all symptoms disappeared during sleep, which seemed in every way normal; that all the symptoms were very much intensified at the dressings, and that temperature, pulse and respirations were normal. On these observations I based a diagnosis of hysteria, which proved to be correct. The phosphatic formula was inverted.

CASE 11.—*Meningism due to Influenza Toxins.*

History.—S. G., aged 5, female, whose family history included diabetes mellitus, hay fever, and chorea, had high fever and delirium with every illness. Patient was taken ill while playing and had convulsion, headache, vomiting, delirium; temperature 104, pulse 130 in four hours. Next day sneezing, coughing, suffusion of eyes, coryza, led attendant to suspect measles, though immunized by preceding attack. Lymphatics in neck were swollen. Revised diagnosis, influenza, which was prevalent at the time. Drum membranes both bulging, myringotomy. Temperature and pulse remained high. Head drawn back by nuchal spastic. Death from bronchopneumonia.

Autopsy.—Autopsy showed no macroscopic or microscopic intracranial abnormality. Dr. Joseph H. Barach searched carefully a number of specimens but failed to find any cellular evidence of inflammation. Cultural and microscopic examinations of cerebrospinal fluid were negative.

CASE 12.—*Meningism due to Typhotoxins.*

History.—J. K., aged 15, male, family history was unknown. Both antihelices were absent. At orphanage it was said he had had convulsions at the beginning of every severe illness. Chronic otorrhea of some years' duration was one of Hutchinson's trio, all of which were present. In the first week of typhoid fever there were headache, active delirium, herpes labialis, vomiting. In the second week, stupor and retraction of the head. Bilateral Parrott's pupillary sign was present. Temperature ranged between 102 and 104, pulse 100 to 120. In the third week patient died of perforation.

Autopsy.—Autopsy failed to show any sign of meningitis. There was no excess of cerebrospinal fluid, no engorgement of the intracranial vessels, no trace of serous or fibrinous exudate. Careful microscopic search by Dr. Joseph H. Barach failed to show any new connective tissue cells, or evidence of leucocytal migration. My diagnosis in this case was meningitis from extension of the old otitic pus focus, and I advised immediate operation, which erroneous advice was not followed, for reasons unnecessary to mention.

CASE 13.—*Meningism from Toxemia, Secondary to the Swallowing of Otitic Pus.*

History.—H. C., aged 16 months, male, four months after measles, while in apparent health, was suddenly taken ill with vomiting.

Symptoms.—Photophobia, opisthotonus, neck muscles as rigid as if the vertebræ were ankylosed, flexors of legs stiffened at times, but not quite so rigid as the nuchal muscles. Child would batter the head with both hands as if suffering severe headache. Temperature 104, pulse 100. Slight gastrointestinal trouble, but not enough to account for the symptoms.

Operation.—Having excluded other possible causes, Dr. W. P. McCorkle asked me to look at the ears and throat. The nasopharynx was filled with pus, which was streaming from the left Eustachian tube. Both membranæ tympanorum were reddened. I incised both of them, a little serum coming from the right, pus from the left.

Next day the meningitic symptoms were much lessened, and in four days the child was well, though some soreness and stiffness of the nuchal muscles persisted for a week, evidently the result of the violent tonic spasm, which at its worst was the most rigid I ever saw. The child could have been suspended by hooking the occiput on the edge of a table.

CONCLUSIONS.

1. Without lesion of the meninges there may be a syndrome comprising many of the diagnostic symptoms of meningitis. Before recovery, such cases are often indistinguishable from meningitis.

2. The term meningism is, on the whole, the least objectionable that has yet been applied to this syndrome.

3. Nosologic independence of the condition will stimulate research.

4. According to etiology, these cases may be classified as either reflex, toxemic or irritative.

5. In all three classes there are circulatory changes, and in many cases direct action on the cortical and subcortical cells. In the toxemic cases the nosotoxins circulating in the blood act as toxic doses of cerebral poisonous drugs do.

6. As otologists we have mostly to do with irritative and toxemic cases. When any of these forms occur accidentally in a case with middle ear disease, correct diagnosis becomes of the utmost importance.

7. Any meningitic symptom may occur, but the erethistic are much more frequent than the depressive. The full development of pressure symptoms or paralysis will usually exclude meningism.

8. The readiness with which the symptoms of meningism may be quieted by small doses of morphin is a valuable diagnostic point.

9. These cases of meningism are distinct from Quincke's "serous meningitis;" in that there is no serous trouble.

10. In the course of middle-ear disease, the symptoms of meningism often demand radical operation for cure, even if the mastoid be yet uninvolved.

THE RADICAL MASTOID OPERATION.*

FRANK ALLPORT, M.D.
Professor of Otology and Clinical Professor of Ophthalmology and Otology, Northwestern University Medical School, etc.
CHICAGO.

The radical mastoid operation is employed principally for the permanent cure of intractable chronic purulent otorrhea, and consists essentially in opening the mastoid cells, breaking down the upper portion of the posterior osseous meatus, throwing the cells, antrum, aditus ad antrum, tympanum and meatus into one large cavity, which must be thoroughly cleansed of all pathologic tissue, both soft and osseous, and then covering this large bony surface with new epithelium by means of specially

*The following illustrations are omitted: Figures 3, 4, 6, 14, 15, 17, 19, 21, 22, 23, 42, 43, 44 and 45. Most of these appeared in THE JOURNAL April 14, 1906. They will appear in the reprints of this article.

devised flaps, skin grafts and natural healing processes. This procedure is the acme of mastoid surgery, should only be undertaken by an operator of special experience, and is worthy of the continued study of the aural surgeon. Perhaps in no space of similar size in the body is operative work fraught with so much danger as when the surgeon undertakes to break down the innermost portion of the osseous meatus and to remove all pathologic products from the remote recesses of the hearing apparatus. In and near this minute space are found the sigmoid sinus, the internal carotid artery, the jugular bulb, the cerebrum and cerebellum, the facial nerve, the ossicles, the fenestræ ovalis and rotunda, the cochlea, the semi-circular canals and other portions of the labyrinth, etc. All of these anatomic landmarks are to be avoided, and to do this and still perform a thorough and curative operation is a task of no mean caliber and one that may well tax the skill and experience of the aural surgeon. It can be well understood that an absolutely accurate knowledge of the anatomy of the parts, obtained from many dissections, and much study of the temporal bone, must be the essential preparatory steps for him who would undertake to do this work, and no one should even then assume the responsibility who has not seen the operation performed many times by competent operators. The words "radical operation" are used to express conveniently what was known, and is now frequently referred to, as the "Stacke-Schwartze" operation, so called because it combines the good features of both Stacke's and Schwartze's ideas. Stacke proposed entering the antrum (after the post-auricular incision had been made) by way of the meatus and tympanum, while Schwartze advocated opening the antrum first and then proceeding to the tympanum and meatus. Thus the term "Stacke-Schwartze" operation was evolved, which has finally given place to the more comprehensive word "radical," as it certainly is a procedure radical in nature and intended for the complete cure of a suppurating ear.

PRELIMINARY TREATMENT.

Before the operation is performed the head should be thoroughly shampooed and cleansed and about one and a half inches of hair bordering the mastoid process should be removed by shaving. The ear should be scrupulously cleansed with alcohol and profuse bichlorid irrigation, and the side of the head and neck on which the operation is to be made should be thoroughly scrubbed with brush, soap, alcohol, ether, bichlorid solution, etc., after which a wet bichlorid pack should be placed over the operative area and retained by a bandage. This cleansing process should be repeated after the patient has been anesthetized and is ready for the operation. An essential factor in this operation is constant, reliable and intense illumination, for which purpose several devices are satisfactory. I prefer a strong electric light attached to the forehead, the eyes being protected by a metal shield, but there are other methods of illumination which, doubtless, are equally satisfactory for lighting up the remote and perplexing areas of the tympanum, antrum, etc., without which a satisfactory operation is impossible. The head light which I use goes over the head and the electric wire is not directly connected with the forehead pad, which, of course, very materially mitigates the heat of the apparatus. This is still further lessened by the lamp being thrust away from the head by a jointed arm that can be bent in any direction. On this is used a 16 candle-power lamp, with a bell-shaped aluminum shade, thickly coated on the outside with a black fiber hood, which furnishes a brilliant illumination with a minimum amount of heat. (Fig. 1.)

THE INCISION.

The first step in the operation is the incision through the soft parts, and this is made by various operators in many ways, some making a long straight incision, others give it a slight curve, while still others make an incision considerably curved around the superior portion of the auricle. Whiting and some others make a second incision at about the middle of the first and proceed directly backward for about one inch for the purpose of affording a large operating field.

The incision I make is an extensive one (Fig. 2), extending from a point a little below the mastoid apex to a point directly over the upper anterior prolongation of the auricle, thus curving it acutely and enabling a large operating field to be exposed. I make it as long as possible to avoid the annoyance and delay of having to enlarge the opening from time to time, because fresh outbursts of hemorrhage obscure the bone work and have to be controlled. I can see no objection to a long incision, as an extra suture or two will set matters right at the end of the operation, and I believe it is better to commence the incision at the mastoid tip rather than at its base, as there is less danger of plunging the knife into the cervical tissues and producing troublesome hemorrhage.

BARING THE FIELD.

After the incision has been completed the soft tissues should be pushed away in all directions by a periosteotome (Fig. 3*), care being taken to preserve as much periosteum as possible. While this is easy of accomplishment at the anterior, superior and posterior portions of the bone where the osseous surface is smooth and but loosely attached to the periosteum, it is quite a different matter at the inferior aspect of the bone over the mastoid tip, where the bone is rough and the periosteum, tendinous tissue, etc., are firmly adherent to the corrugated surface. It will here be necessary to cut away the soft tissues with strong, blunt, curved scissors, being careful not to carry the points of the scissors too far from the mastoid apex, as it is possible to cut the facial nerve as it proceeds from the stylo-mastoid foramen to the cervical tissues. After the scissors have been thus used a scraping periosteotome should be employed to smooth away from the bone surface the ragged soft tissue that has been left by the scissors, after which the narrow periosteotome should be passed between the osseous and cartilaginous meati to separate them at their posterior, superior and inferior aspects in order that a clear view of the innermost recesses of the meatus and tympanum may be obtained, which is absolutely essential to intelligent operating. This can be much facilitated by passing a long narrow strip of gauze through the cartilaginous meatus and bringing it out behind, between the cartilaginous and osseous meati. The now doubled gauze strip should then be handed to an assistant, who should gently pull the cartilaginous meatus and auricle forward, thus keeping the former out of the way of the operator's view and surgical procedures. It should never be forgotten that a clear view of the osseous meatal margins is necessary in all mastoid operations, as it affords to the surgeon a key to the entire operative area and indicates the point at which chiseling should commence. It will be observed that nothing has been said about the suppression of hemorrhage by artery forceps, and this is owing to the fact that I seldom use them in a mas-

toid operation, having found that they are in the way and that the moment the self-retaining retractors are placed in position and well expanded, all soft tissue hemorrhage ceases; nevertheless, if a surgeon employs the hand retractors he must, of course, use artery forceps for the control of flap hemorrhage. In this article, however, it is assumed that the self-retaining retractors (Fig. 4*) are employed and that one pair is placed in the upper angle of the wound and another pair in the lower angle. They should be so placed that their teeth are under the periosteum and that the entire extent of the soft flaps is within their grasp. The arms should then be separated to their fullest capacity, thus suppressing hemorrhage by traction, and opening up an enormous view (Fig. 5) of the bony operative field. This renders the horizontal backward incision recommended by Whiting and others unnecessary, unless extensive cerebellar or lateral sinus operative procedures are indicated, which, fortunately, occurs but seldom.

The parts should now be cleansed and work on the bony cortex commenced with chisel, mallet (Fig. 6), rongeur, curette, etc. Chiseling should be commenced in the space limited by a line drawn through the superior roof of the osseous meatus above, and another drawn through the posterior wall of the osseous meatus behind and directly in the region of the spine of the meatus.[1] The bone should be cut away (Fig. 7), little by little, until the interior of the mastoid cavity and the mastoid antrum are exposed to view, care being taken in the initial work to keep as close to the posterior wall of the meatus as possible, and in searching for the antrum we should proceed from the upper angle of the bone opening, inward, forward and on a line with the course of the external auditory meatus, keeping as close to the latter as possible and below the zygomatic extension, until the antrum is reached. The operator will frequently be reminded as the mastoid cavity is approached of the sclerotic or hardened character of the bone. It is not so easy to break through the mastoid cortex as it is in acute abscessed conditions, as the protracted osteitis has often produced an ivory-like hardness of the bone and an increasing obliteration and consolidation of the cells, which produces a hardness that will sometimes splinter the strongest chisel.

Layer after layer of the cortex may be removed before any evidence of cell structure is manifested, and for this reason the rongeur may not be used so freely as in the acute operation. Owing to the osseous sclerosis and cellular obliteration it is not, as a rule, necessary to open the bone as far as the apex, although should well-defined cell development or infection be manifested, as the interior of the bone becomes gradually exposed, complete evisceration of the process should be accomplished. In cases where osteosclerosis has existed for some years there is apt to be a gradual pulling forward of the sinus and a consequent encroachment on the normal operative area, which renders it necessary for the surgeon to exercise additional caution, lest he inadvertently break through the sinus wall. The same process sometimes lessens the caliber of the antrum and draws it deeper and further into the bone, a possibility which should not be forgotten by the careful surgeon. The operator should carefully endeavor to produce a funnel-shaped opening in the bone, with its broad roundish base at the mastoid cortex, and its comparatively pointed apex in the tympanic and antral cavities. The outlines of the funnel may be necessarily altered in case of a forward displacement of the sinus, and in case this vein lies so far forward as to render a typical opening of the antrum, etc., more or less difficult or impossible, the antrum should be reached, as advised by Stacke, by breaking down the posterior-superior wall of the bony meatus and progressing backward and inward until the antrum is reached. This expedient will, however, be rarely desirable, as such unusual malpositions are, happily, extremely rare.

After the funnel-shaped opening has reached the antrum, and a bent probe (Fig. 8) can be gently passed from the antrum into the tympanum, and can be felt by another probe passed into the tympanum by way of the bony meatus, the posterior-superior wall of the meatus should be broken down (Fig. 9) by chisel, rongeur, etc., under ample and intense illumination. From now on, if not before, it is better to stand or sit at the side of the patient, as the succeeding steps of the operation can be performed with more safety, and better power of observation, than if the operator stands at the patient's back.

In breaking down the posterior-superior wall of the meatus the aim should be to cut away sufficient bone to leave a somewhat triangular-shaped space with its base at the bony meatal orifice and its apex at the tympanum and antrum. This may be accomplished by the chisel or a small Jansen rongeur or by one of the bone crushers that are used by some operators. It must not be forgotten that injury to the facial nerve or semi-circular canal may easily accompany this step of the operation, and much care should be exercised in its accomplishment. The complete clearing away of the upper portion of the bony meatus without injury to surrounding parts is much facilitated if a small pathway through the bone to the tympanic cavity can be distinctly blazed by some instrument. I have found the bone crusher which I use (Fig. 10) to be of great service for this purpose. Before using it the mastoid cavity, antrum, etc., should be thoroughly curetted and cleaned. The crusher has not sufficient power and strength to break down the entire thickness of the meatal wall. The surgeon should proceed as if expecting to destroy the meatal wall with the chisel and mallet alone, and carve away a considerable portion of the bony wall with these instruments.

After, perhaps, one-half of the work has been accomplished the footplate of the crusher should be carefully insinuated through the antrum to the middle ear, the handle firmly depressed so as to raise the footplate of the instrument away from the inner tympanic wall, and the arms of the handle forcefully brought together (Fig. 11), which will, of course, crush down the bone contained between the jaws of the instrument. The blades are not broad, and the channel thus produced is, therefore, of small dimensions, but it is quite sufficient to point the way for further bone destruction, which now can be easily and comparatively safely accomplished by chisel, rongeur, curette, etc.

1. The absence of characteristic meatal outlines in young children, as well as the fact that in the young, the antrum is located relatively higher than in those of adult years, renders it necessary for us to seek other guides to initiatory chiseling procedures in patients of tender years. Such a guide may be found in the bony ridge constituting the posterior root of the zygoma, whose lower edge, usually, is about on a level with the antral roof. Chiseling should therefore begin at a point just below the bony ridge, and should also be just posterior to a line drawn through the position of the posterior wall of the undeveloped osseous meatal opening. Neither should it be forgotten, as mentioned recently by Kopetzky in the American Jour. of Surg., that in the young the tympanic cavity is only separated from the jugular bulb by a very thin plate of bone, in which may sometimes be found congenital defects, and that therefore operative procedures in the neighborhood of the tympanic floor, should be very circumspectly performed.

The length of the posterior-superior meatal wall removed, which forms the base of the triangular wedge, should extend from the floor of the orificial margin of the bony meatus to the superior wall of the meatus, and the two angles of the opening should gradually converge until the inner wall of the tympanum and antrum are reached. By adhering to this design the facial nerve as it passes through its sclerotic, petrous casing on its downward course to the stylo-mastoid foramen will escape injury, and the writer does not believe that many of the operative facial paralyses are produced at this point in the operation. In cutting away the posterior meatal wall it should be remembered that the facial nerve as it passes through this wall is situated about half an inch from the surface of the mastoid cortex, and that there is, therefore, no danger of touching it until about this depth is reached. The posterior meatal wall may, therefore, be cut away clear down to the floor of the meatus at the meatal mouth, which produces a much smoother healing than when a large osseous hump is allowed to remain at this point, on account of the needless fear of cutting the facial nerve. The opening should gradually diminish in size until the attic, aditus ad antrum and antrum are reached. Great care should be taken as the innermost particles of bone are struck away, a climax which can usually be distinctly recognized by the feel of the chisel and the crushing sound of the bone, as if a cavity had been opened. It is extremely easy as this last portion of the bone is broken to send the chisel crashing into the inner wall of the tympanum or aditus, thus rendering injury to the facial nerve, cochlea, semi-circular canals, etc., quite possible. It is for this reason that Stacke devised his protector, which is being used less and less by experienced operators, who prefer to dispense with it as a needless and somewhat dangerous appliance, the necessity for it being overcome by careful and painstaking manipulations.

After the last fragment of the bony bridge which separates the tympanum from the antrum has been removed (Fig. 12) the surgeon is at the most critical period of the operation, where the most delicate and careful work is to be performed and where the greatest danger of facial paralysis obtains. There should again be impressed on the mind of the surgeon the urgent necessity for strong illumination and the desirability of working slowly and deliberately, frequently wiping away the blood and keeping the general and specific topography of the parts well under observation, so that important organs may escape injury. The lower portion of the meatal remnant should be carefully smoothed and rounded, and the upper portion, together with the upper, outer portion of the tympanic and antrum walls, thoroughly removed so that the attic roof is on a direct line with the upper wall of the bony opening (Fig. 13), and can be thoroughly and unobstructedly viewed, examined, curetted and drained.

A failure to perform properly this portion of the operation has been the cause of many uncured cases. As the facial nerve runs along the upper and inner angle of the tympanum, the removal of the portion of the tympanic and antrum walls just described is accomplished with considerable danger to the nerve, and much caution should be observed in the performance of this necessary step. After this is accomplished, if not before, the malleus and incus may be removed by forceps, and the walls of the tympanum, aditus ad antrum, antrum and mastoid cavity carefully explored for necrotic fistulæ, which, if found, should be dealt with in accordance with sound surgical principles, involving a thorough elimination of necrosis, etc., wherever found. The chorda tympani nerve is invariably injured during these procedures, producing a temporary numbness and loss of taste in the anterior two-thirds of the tongue on the affected side. All granulation tissue, necrosis and cholesteatoma should now be removed with the curette, especial care being taken to free the tympanic cavity of such pathologic accumulations. In curetting the middle ear, etc., however, much caution should be observed lest the tegmen be unnecessarily broken, the facial nerve injured, the stapes removed and the fenestra ovalis opened to infection, or the cochlea or semi-circular canals entered. Care in curetting when near these danger points should, however, enable the surgeon to avoid injurious traumatisms of this nature. It should not be forgotten that Jansen and other leading surgeons are commencing to carry the boundaries of this operation still further than was formerly seriously proposed, and are advocating and practicing the elimination of all labyrinthine necrosis, great care being, of course, taken when possible to avoid injury to the facial nerve. From the time the necessary portion of the meatus is being removed to the time when the bone operation is completed it should be the specific occupation of a conscientious assistant constantly to watch for any twitching of the face on the side of the operation, as this phenomenon would probably indicate an interference with the tissues of the facial nerve and would guide the operator to desist from further manipulations in that particular spot.

Under good illumination and perhaps with applications of adrenalin and drying with cotton or gauze, the tympanic orifice of the Eustachian tube should be found and curetted, as, if this is not done, granulation tissue usually remains and a mucous secretion from the unclosed tube may become a constant and annoying sequel of the operation. This little procedure may be accomplished with a small sharp spoon curette, and Whiting has devised a conical-shaped bur which quickly rims out the orifice. I have, however, found his bur overlarge for the purpose and do not like its conical shape, as it may be too energetic in its action, especially when attached to such a strong handle, which not only invites undue force but also obstructs the view of the bur and tube, which should always be kept in sight. I, therefore, use a bur with round outlines which seems capable of doing less harm, and also one (Fig. 14) possessing a straight handle (without a hand crossbar, as in Whiting's) which can be rolled between the fingers when rimming out the tube orifices. It is not likely that much force will be employed in using this instrument, and the bur and tube can always be kept clearly in view. It should never be forgotten that the osseous Eustachian tube and the internal carotid artery are only separated by a thin shell of bone which may easily be broken in curetting the Eustachian tube, a fact which argues in favor of careful manipulation and in a forward and outward, instead of a backward pressure of the curette or bur in the curetting process, as the canal for the artery lies behind that of the Eustachian tube.

Having now finished the bone portion of the operation and thrown the meatus, entire tympanic cavity, aditus ad antrum, antrum and mastoid cells into one large cavity, which has been thoroughly cleaned and curetted, the surgeon should next turn his attention toward the suturing and thorough and rapid healing of this large cavity. The retractors should now be removed and the field of

operation cleaned, after which the cartilaginous meatus should be split and cut, according to the fancy of the operator, in such a manner as to produce flaps by means of which great progress may be made toward the speedy healing of the large bony cavity; and the flaps most in use for the plastic portion of the operation are those of Panse, Körner, Ballance, etc. The specific objects of the procedure are to prevent stricture of the cavity and to employ the upper, lower and posterior portion of the cartilaginous meatus to assist in covering the walls of the osseous cavity and to act as foci for the process of

Fig. 1.—The electric head light.

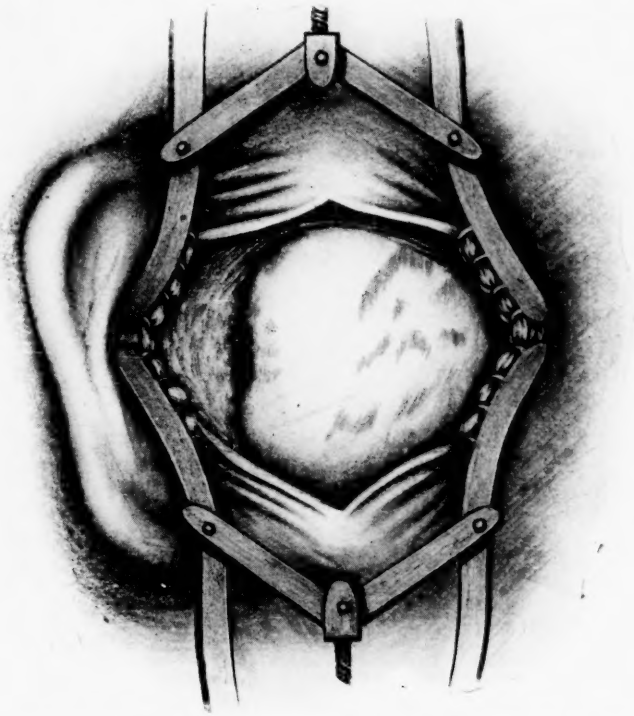


Fig. 5.—Showing the retractors in position, and the well defined outlines of the osseous meatus.

Fig. 2.*—The line of incision.

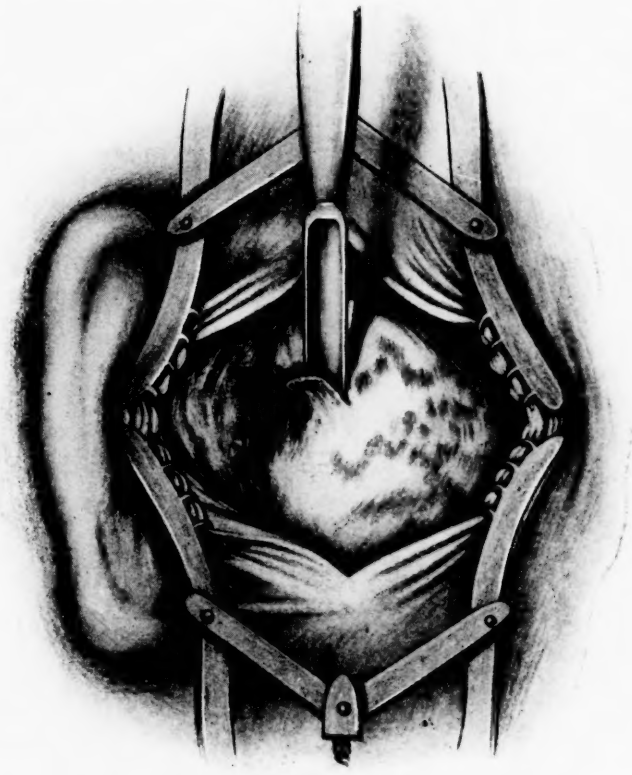


Fig. 7.—The grooved chisel of Whiting at work.

new epidermization. The Panse flap may be made by splitting the cartilaginous meatus horizontally from its tympanic end to the concha and then making a cross or "T" incision at the conchal edge, which produces two triangular-shaped flaps which may be pushed or sutured back and made to partially cover the exposed bone. One of the objections to this, as well as to other plastic procedures, resides in the large, gaping and deformed meatus that frequently follows. This trouble may be entirely dissipated by the use of two knives which make the cross or "T" incision first, and with accuracy, thus producing a meatal orifice of exactly the desired shape and character.

One knife is lance-shaped (Fig. 15) and double-edged and may easily be pushed from the raw posterior portion of the auricle (Fig. 16), at a point corresponding as

nearly as possible to the middle edge of the meatus, through to the middle of the meato-conchal rim, where the point reappears and where the blade edges should somewhat enlarge the opening thus made. The counter puncture should be made a little back of the meato-conchal edge in order to enlarge the meatal orifice.

The knife should now be withdrawn and another and blunt-pointed knife (Fig. 17) made to take its place, as the see-saw movement necessary to finish the incision up and down would be likely to produce multiple punctures in the other side of the meatus, provided the use of the pointed lance-shaped knife was continued.

The blunt point of this knife renders the subsequent procedures free from such embarrassments, and the fact that the blade convexes forward on the edge enables the surgeon to more effectively complete the remote corners of the incision (Fig. 12).

The knife should be carried up as far as desired and then down, always keeping in view the meato-conchal edge and retaining the line of incision a little behind this edge. In this way the meatal opening is only enlarged a trifle and the surgeon can be absolutely sure that a constant and non-deforming result will occur. The back-

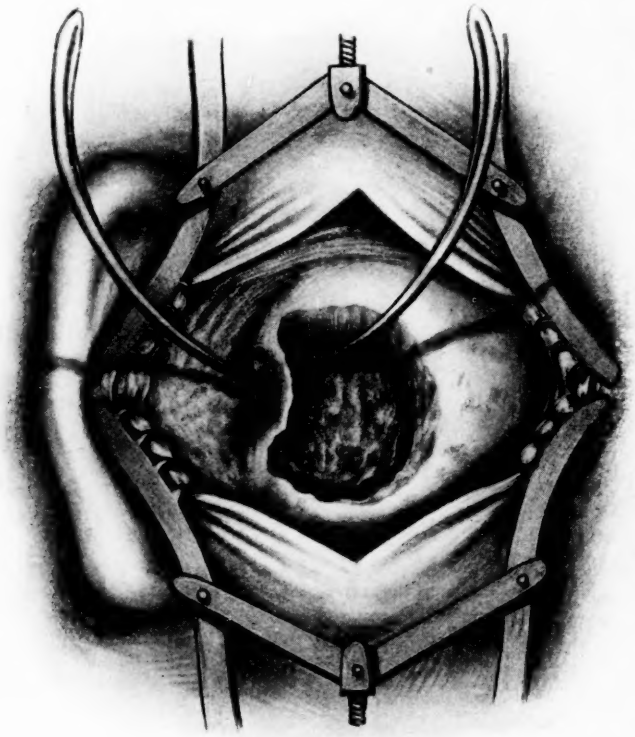


Fig. 8.—Showing the funnel-shaped opening, with one probe passed into the tympanum by way of the antrum, and another into the tympanum by way of the meatus.

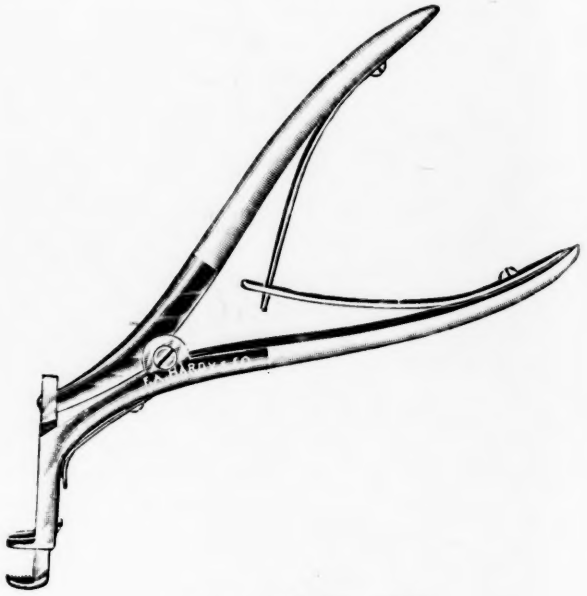


Fig. 10.—The bone crusher.

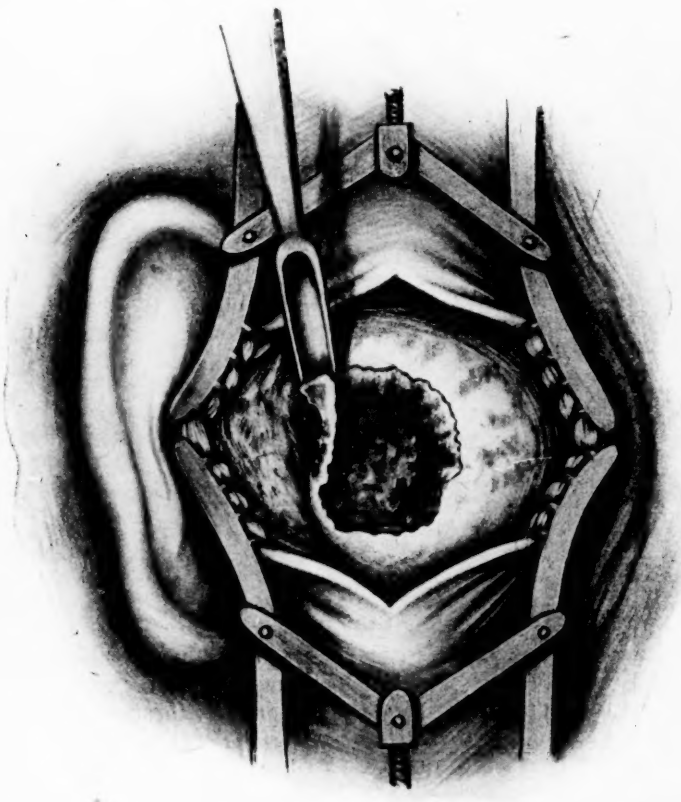


Fig. 9.—Commencing to cut away the bone from the upper posterior meatal wall.

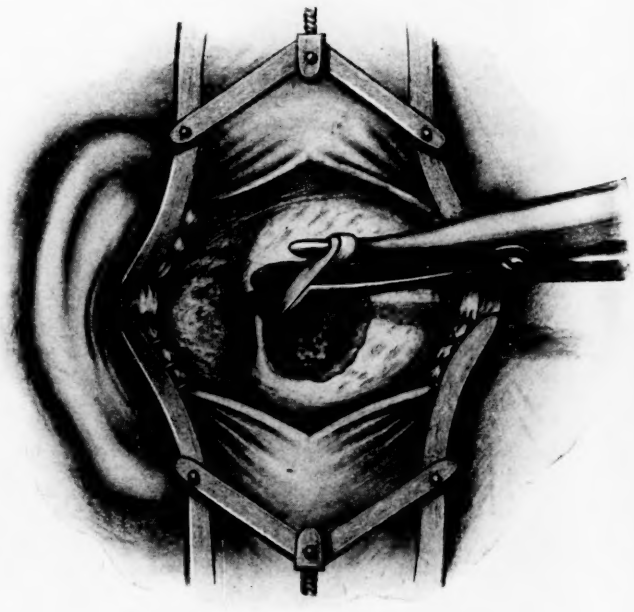


Fig. 11.—The bone crusher at work.

incision along the cartilaginous meatus can now completed by a divulsor and knife. For the purpose spreading the meatus or of directing the course of the knife some surgeons have used a strong pair of expanded forceps or a grooved director, but for some time I have used what I call a meatal divulsor (Fig 19), which fits into the meatus and spreads it firmly (Fig. 20), thus enabling the surgeon to easily and accurately cut the posterior wall of the meatus wherever desired. Some surgeons make this incision at the middle of the meatus,

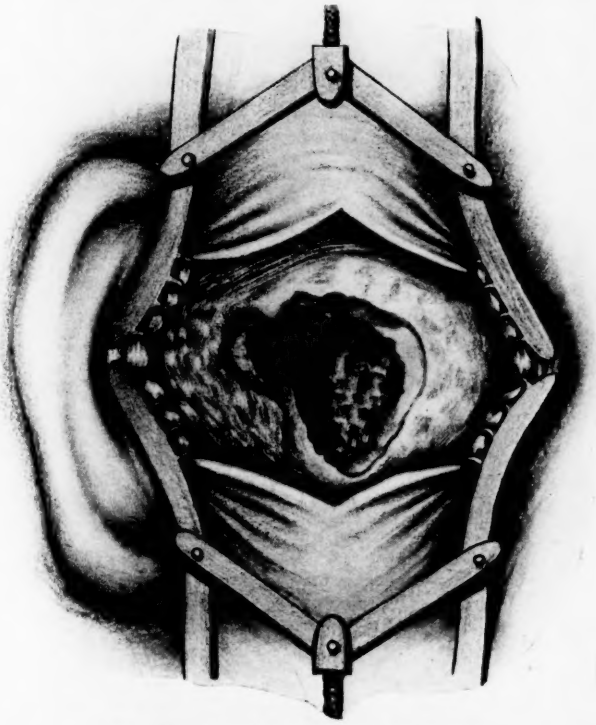


Fig. 12.—Showing the completed opening.

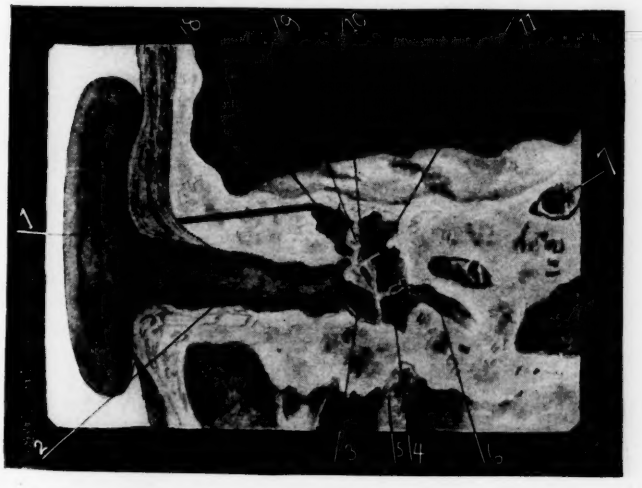


Fig. 13.—1, auricle; 2, external auditory canal; 3, drumhead; 4, stapes; 5, internal carotid artery; 6, eustachian tube; 7, internal carotid artery; 8, attic; 9, malleus; 10, incus. The broad black line shows that portion of the upper bony meatus which must be removed. (After Deaver.)

others prefer to make it considerably below the middle, as by this procedure a large upper flap is produced which materially assists in dermatizing the superior wall of the large bony cavity. The floor of the new meatus makes much less trouble in proper healing, as the floor of the osseous meatus has not been materially disturbed in the operation. The latter method of meatal splitting is probably the better, although either may be used.

The flaps can be made much more pliable and useful by thinning them of all loose connective and soft tissue, and even some of the cartilaginous tissue by forceps, scissors or knife. The flaps should now be turned back and sutured (Fig. 21) with catgut to the posterior portion of the anterior lip of the original mastoid incision, or they may be simply forced back and held in position by packing.

Some operators advocate endeavoring to fasten the periosteum of the anterior or auricular flap to the periosteum or soft subcutaneous tissue of the posterior flap.

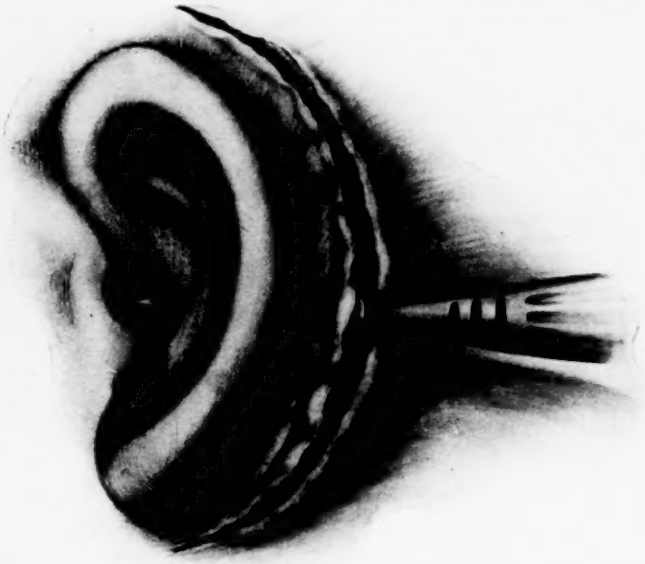


Fig. 16.—Showing the lance-shaped knife puncturing the edge of the concha.

Fig. 18.—Shaping the T-shaped incision.

While this may frequently be accomplished I am convinced that it is a serious mistake, not only because of the tenseness of the tissues produced by the stretching, but because it frequently produces in the healing a division of the mastoid cavity into two cavities, one above the stretched false, soft tissue roof, and the other below it. The two are usually connected by one or two rounded apertures, and the upper cavity not having its bony roof adequately dermatized, must, of course, be a focus of

disease and discharge that prohibits a successful termination of the case. The triangular flaps should, therefore, be turned back, as it were, and their apices sutured to the soft subcutaneous tissues of the *anterior* mastoid flap.

It must, of course, be evident that in case the horizontal incision through the cartilage is made down as far as possible in order to produce a larger upper flap to help cover the roof of the opening there will be only one flap (and that one the upper) which is suturable, as the lower flap will be so close to the bone as to be unsuturable. The original outside mastoid wound is now

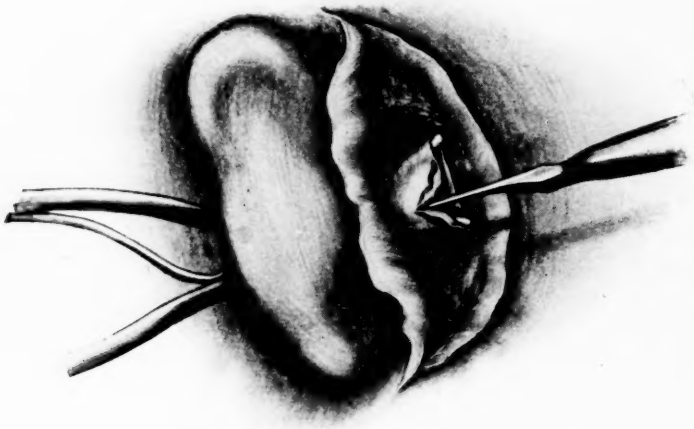


Fig. 20.—Making the horizontal incision through the cartilaginous meatus, by means of the divulsor and knife.

drawn together with Michel metal (Figs. 22, 23, 24, 25) or silkworm gut sutures, after which the meatus is irrigated, flushed with some antiseptic solution, dried, cleansed, and firmly packed with 5 per cent. xeroform gauze, which I use exclusively for packing mastoid cavities.

Especial pains should be taken to support the triangular meatal flaps in their new positions by firmly placed gauze packings. Loose gauze is now freely placed over the entire operative area, a soft pliable bandage applied and the operation is completed.

Some surgeons prefer what is known as the Koerner flap (Fig. 26) for the purpose of inducing epidermis to form over the large osseous area, and this is performed

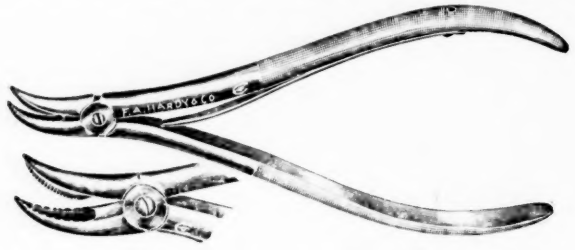


Fig. 24.—Instrument for removing the Michel sutures.

by making two longitudinal incisions in the posterior tissue of the cartilaginous meatus, from its tympanic end to the conchal margin, about one-quarter of an inch apart.

This produces what might be called a tongue flap, and should be made as thin as possible by cutting away all superfluous tissue, and possibly by even dissecting out the cartilage. After being thus prepared and the parts cleaned and dried, the tongue flap should be pushed backward until it comes fully in contact with the bone, and then should be held there by packing. This forms quite a large center for epidermis production and often produces a complete and rapid healing of the parts.

Fig. 25.—Showing the Michel sutures in position.

Fig. 26.—The Koerner flap, held by forceps.

(*To be continued.*)

The Free Hospital.—The proper attitude of the hospital to its community, in regard to the admission of patients, is difficult of solution. The greater the diversity of social conditions and the larger the number of people whose relations with the hospital must be governed by rules and regulations, the more arduous the task. This is what the medical charity faces when it attempts to systematize its activities.—E. B. Young, M.D., in the *Bull. of Am. Acad. of Med.*

SPINA BIFIDA.*

HARRY GREENBERG, M.D.
Attending Surgeon to Mt. Sinai Hospital.
MILWAUKEE, WIS.

The object of this paper is to plead for a more extended use of operative means in the treatment of spina bifida, to add another case in which the patient was successfully operated on to those already on record, and to elucidate some points in the operative technic of this condition, simplifying the operation as well as rendering it more effective.

A child born with one or more vertebræ defective, and with the contents of the spinal canal protruding through that defect, is certainly a sorrowful object to thrust on a community. Left to its fate, such a child will either succumb early from rupture of the protrusion, or from an ulceration of the tumor and consequent septic spinal meningitis; or, if it survives, it is condemned to a miserable existence with paralyzed rectal and vesical sphincters and various trophic disturbances equally distressing.

The case I report is of the latter type, and the results obtained from the treatment instituted were so satisfactory that its presentation before the society was deemed justifiable.

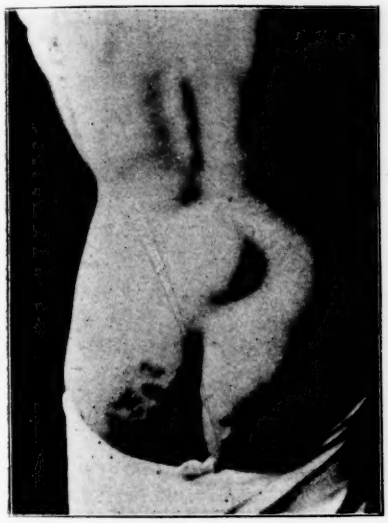


Fig. 1. Patient before operation.

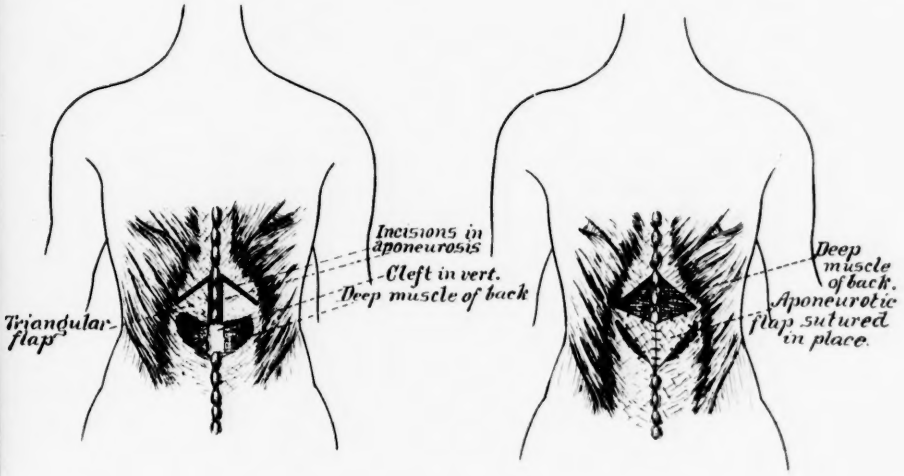


Fig. 2. Details of the method of operation.

Patient.—B. A., aged 16, a Russian Pole, one and one-half years in this country, referred to me by Dr. M. M. Spitz, presented herself for treatment for a congenital swelling on her back and inability to control urination or defecation.

History.—There was no trace of nervous or mental derangement or of any congenital malformation on either parent's side, nor any evidence of syphilis. Immediately after birth a mass the size of a hen's egg was noticed in the lumbar region of the patient's spine. It increased in size in proportion to her growth. The patient was normal in all other respects. She was a bright, intelligent child and walked when she was 1 year old. She had at no time control of either rectum or bladder, and the urine dribbling from her continuously gave her an offensive odor, although her personal habits were cleanly. At times she had retained feces, her bowels remaining constipated for seven or eight days, after which she would have an involuntary movement. At all other times she had incontinence. When she was 7 years old trophic disturbances developed over both buttocks, manifested by two large ulcerated areas, which have remained open more or less, healing part way and breaking open again. When she was 10 years old she had a severe attack of cystitis, from which she recovered. At 15 she suffered from a milder attack of the same trouble, and has had pus in the urine most of the time since, but not sufficient to cause any subjective symptoms. Since she was 1½ years old a defect was noticed in her left foot, and when she was 14 years of age her right foot commenced to show signs of progressive deformity.

Examination.—The patient was an unusually bright and intelligent girl and well developed. An offensive urinary odor emanated from her body. Abdominal and thoracic findings were negative. In the lumbar region a mass about the size of a medium-sized cocoanut was present, about 10 cm. in diameter. It had a broad base, was covered by normal skin, and had no erosions or discolorations. Over each of the nates was an ulcerated surface about the size of the palm of the hand, the outer border of each being surrounded by scar tissue (Fig. 1).

The left foot had a complete pes planus, the arch being completely sprung; the right foot was shorter and broader than the left and had an unusually high arch. The entire leg appeared somewhat atrophied compared to the left.

Reflexes: Both knee jerks were absent; no ankle clonus was present and there was no Babinski sign.

Tactile and pain sense as well as temperature sense were entirely absent over the area below the tumor growth, as well as over both buttocks, several inches beyond the ulcerated surfaces. Pain sense in the lower extremities appeared to be hypersensitive.

Urine: Appearance cloudy; sp. gr., 1011; reaction, alkaline: albumin and pus were present and large numbers of triple phosphates.

Treatment.—The patient had been under the care of various surgeons, both abroad and in this country. She also stayed several months in one of the large hospitals in Europe, and although ever willing to submit to any form of treatment offering any possibility of relief, operation was everywhere denied her. It appeared to me to be the only possible means of relief, and further, that operative interference in her case offered a fairly good prognosis, both as to immediate and remote results. The part of the cord affected in her case was that below the eleventh dorsal vertebra, the cauda zones, the axons of which are possessed of nuerilemma and are capable of regeneration, if placed in a condition to do so. So, even if a degeneration of that portion of the cord had already existed, hopes might still be entertained for regeneration with improvement in the girl's condition in time.

Operation.—The girl was admitted to the hospital and was operated on the following day. The cleft was in the arches of the first and second lumbar vertebræ, the laminæ were wanting. The tumor proved to be a mixed lipoma and myelomen-

* Read before the Milwaukee County Medical Society, Oct. 12, 1906.

ingocele. The meningeal sac was intimately adherent by fibrous bands to the lipomatous mass; and the terminal end of the cord and a network of nerve trunks were firmly adherent to the dorsal portion of the sac. These were replaced within the spinal column, the sac removed, as was also the mass of fat, the cleft in the bone covered and the skin over it united.

Postoperative History.—For the first six days after operation the patient had an even rise of temperature, ranging between 99.8 and 100.2 F., and kept the bed clothes constantly saturated with urine due to the continuous dribbling from the bladder. On the third day she had an involuntary movement of the bowels after previous administration of a cathartic. This happened several times afterward under similar conditions. On the seventh day she was able to retain urine for two hours at a time, and to control its passage, and she declared it was the first time in her life that she experienced the sensation of desire to urinate and control of the same. Her rectal trouble also began to improve after that time.

Unfortunately, three days later she developed an acute cystitis which delayed her convalescence somewhat. It is now a little over two months after the operation, too short a time to expect any regeneration of degenerated nerve tissue to have taken place, yet sufficient improvement is already manifest in her condition to justify fully the operative interference. This is probably due to the removal of the pressure on the cord.

She is now able to retain her urine from three to four hours at a time; has the sensation of the desire to urinate and has more than a moderate control over the vesical sphincter; only occasionally does desire to urinate and the relaxation of the vesical sphincter come on so precipitately that the urine is voided before she can betake herself to a suitable place. Her rectum fared even better, and she now has a daily evacuation of the bowels under full control and without any artificial aid; only twice did an involuntary evacuation take place during the night while asleep. The ulceration over the buttocks healed without any direct treatment a few days after the operation.

TECHNIC.

Regarding the operative technic of this condition, certain principles must be observed and special care exercised in the application of asepsis and in the emptying of the tumor of its cerebrospinal fluid. Directions for guidance in these particulars may be obtained from any text-book on the subject. It is in regard to the method of closing the defect in the bone that surgeons are still at variance. Merely uniting the skin over the defect by suture as practiced by some does not appear a rational procedure. The skin over the tumor is invariably very thin and even ulcerated and can hardly be deemed a sufficient protection. Flaps of bone and periosteum from the adjacent vertebræ and the crest of the ilium have been utilized by various surgeons with varied success. This procedure has since been abandoned as impracticable. It materially complicates the operation, inflicts considerable traumatism to tissues and thereby enhances a predisposition to infection that, above all things, must be avoided.

The muscle-flap method of Bayer is the one now commonly practiced and advocated. This is executed in the following manner: A longitudinal incision through the entire thickness of the muscle is made on either side of the spine at some distance below the cleft; the flaps are dissected off and reversed over the cleft so that the dorsal surface lies anteriorly. This necessitates cutting the muscle at right angles to the direction of its fibers, which is a disadvantage, and when a large defect is to be covered a considerable depression is left on either side of the back in consequence of the removal of so much muscle tissue. I improved on this method by utilizing the aponeurosis of the latissimus dorsi (Fig. 2). This muscle arises in part by a strong aponeurosis from the spinous processes of the six inferior dorsal, the lumbar and the sacral vertebræ. A longitudinal incision of sufficient length to cover the defect was made over one side of the spinous processes above the cleft, thus freeing a section of the aponeurosis of the latissimus dorsi at its origin on that side. From the upper point of the longitudinal incision another longer oblique downward incision was made. As the aponeurosis is missing directly at the cleft we have here a free border extending horizontally from the lower point of the longitudinal incision close to the lower point of the oblique incision. Thus we have a triangular flap of aponeurosis free at all points except the apex. Using this apex as a center, the entire flap is rotated downward until it covers the defect in the vertebræ on that side. The same procedure is followed on the other side and the two adjacent borders of the flaps are united with chromicized catgut sutures directly over the defect (Fig. 2).

This method is very simple and easy of application, requires but a few minutes' time in its performance, does not seriously interfere with the anatomic relations of tissues, and, lastly, affords for the vertebral defect a covering that ranks next to bone in strength and consistency.

CONCLUSION.

From a study of this case the following facts may be noted:

1. Previous to the operation the girl was growing progressively worse.
2. Improvement in her condition set in within a few days after the operation and has continued to the present.
3. At present, a little over two months since the operation, she is almost entirely well.

The deductions to be made are:

1. Continuous pressure on the terminal portion of the spinal cord will entirely suspend the function of such portion, giving rise to a serious train of symptoms.
2. Such pressure, though extending over a period of years (16 years in this case), need not necessarily impair the nerve tissue of the cord beyond recovery.
3. A speedy restoration of function and alleviation of symptoms may follow the removal of the pressure.

Peerless Building.

CONJUGATE DEVIATION OF THE EYES AND HEAD AND DISORDERS OF THE ASSOCIATED OCULAR MOVEMENTS

IN TUMORS AND OTHER LESIONS OF THE CEREBRUM.

T. H. WEISENBURG, M.D.

Instructor in Nervous Diseases and Neuropathology, University of Pennsylvania; Assistant Neurologist to the Philadelphia General Hospital.

PHILADELPHIA.

(*Concluded from page 1009.*)

AUTHOR'S CASES OF CONJUGATE DEVIATION OF THE EYE AND HEAD.

CASE 1.—McL., a woman, aged 60, was admitted to the Philadelphia General Hospital, March 13, 1905, to the service of Dr. Spiller from the out-wards, with a history of a stroke of one day's duration, in the left side.

Examination.—The tendon reflexes of the upper limbs seemed to be absent. In the lower limbs the patellar and Achilles jerks were increased, more on the left side, and the Babinski sign was present on this side. Sensation for touch and pin prick was normal. The patient was not wholly unconscious and could respond to questions and would obey commands. A sweetish, urinous odor which suggested a uremic condition was present. The pupils were equal and larger than normal, and the response

right was sluggish on both sides. She could not be tested for accommodation and convergence, and ocular movements because of her mental condition. An occasional tremor was noticed which involved the whole of the left side of the face and the left thumb, this tremor being fine in character. The tremor was at times communicated to the lower part of the right side of the face. Besides, the patient had occasionally a distinct series of convulsive movements which were limited to the left side of the face, the muscles of the face twitching about twice a second, and with this there were twitchings in the muscles of the neck, most marked on the left side, the head being turned to the left with both eyelids closing and opening synchronously with the other contractions. The left thumb was also involved, no movement being apparent in the rest of the hand or of other portions of the body. These convulsions lasted about three minutes, after which the patient would take a long breath as though recovering from an attack of epilepsy.

When examined by me, on the date of death which was five days after stroke, the patient's head was constantly deviated to the left, the eyes deviating to the *right*, there being a constant horizontal movement from the left to the right, the eyes not going past the median line.

Autopsy.—No gross lesions were found in the brain. Two depressions were found on the lateral surface of the left cerebral hemisphere which were filled with fluid, one of these depressions occupying the area of Broca, and extending upward into the lower posterior portion of the second left frontal convolution. The other area was in the lower part of the intraparietal fissure. These areas presented the appearance of a pushing apart of the convolutions without the formation of sclerotic tissue. As they were filled with fluid there must have been pressure exerted on the surrounding brain tissue.

Fig. 1.—A fibrosarcoma of one occipital lobe, causing besides other symptoms, paralysis of associated ocular movements, probably as the result of the hemianopsia (Case 7).

CASE 2.—W., a man, aged 60, had been in the Wills Eye Hospital because of glaucoma, under the care of Dr. S. Lewis Ziegler who referred the case to me. He had been blind for the past three years. While walking down stairs he suddenly became unconscious and fell. He was brought back to the wards and had two convulsions, irregular in character. He persisted in this comatose condition for two days, during which time the head and eyes were deviated to the left, but there was no paralysis noticeable in any of the limbs.

Examination.—When examined by me two days after his fall the head and eyes were strongly deviated to the left, the eyeballs being in a constant to-and-fro lateral movement, the movement being always from the right to the left and never past the median line. There was a distinct weakness of the lower part of the right face and to a less degree of the right upper limb. The right lower limb was very little if at all involved. Sensation seemed normal; the tendon reflexes on the right side were increased and the Babinski response on this side was obtained. Forcible deviation of the head to the right would cause immediate movement of the head back to the left.

Clinical History.—The patient soon became conscious and it was then found that he was motor aphasic, and that he could only answer "Yes, Sir" and the word, "Norah." The paresis of the right limb disappeared almost completely and nothing remained but the weakness in the right lower face, this being also less than it had been at first. The deviation of the head was not so marked, but the deviation of the eyeballs was still as marked as ever. He was then admitted to the University Hospital. Examination seven days after his attack showed almost complete disappearance of the paresis on the right side, including the face. The deviation of the head was entirely absent, but the eyeballs still had a tendency to deviate to the left. Voluntary associated ocular movements were well performed upward, downward and to the left, but to the right he could not bring his eyeballs more than just a little past the median line. Motor aphasia still persisted. It was not until about seventeen days after his attack that he was able to bring his eyeballs completely to the right in associated ocular movements. The motor aphasia was still somewhat present.

Diagnosis.—The patient evidently had a hemorrhage in Broca's convolution on the right side, this involving partially the center for movements of the head, and of the eyes in the adjoining posterior portion of the second frontal convolution.

CASE 3.—McJ., a woman, aged 62, was admitted to the nervous wards of the Philadelphia General Hospital, March 28, 1906, in the service of Dr. Spiller.

Examination.—She was mentally clear and answered questions logically and would obey commands well. She stated that she had had intense headache, some dizziness, nausea and vomiting for the previous three days. While lying passively in bed the head was deviated to the right and she was unable to turn it to the left. On a forcible attempt to straighten her head the resistance to the movement was very noticeable. It could, however, be forcibly turned completely to the other side, but would immediately turn to the right. The eyes were also deviated constantly to the right. The patient unquestionably had right homonymous hemianopsia, as she was able to recognize all objects properly on her right side but failed utterly on her left. The pupils were unequal and seemed to react slowly to light. Efforts at convergence in looking to the right could only be tested, and when this was done convergence was normal.

During my examination, which lasted about three-fourths of an hour, the patient had five convulsions which would start as follows: There was first a slow turning of the head from the right to the left; at the same time or perhaps a second later there was an upward movement of the left arm as if the hand was held in gesticulation; the head was now held in violent tonic contraction to the left and the face was drawn to the left, the right face drooping; the eyeballs were in constant contraction to the left and were jerked to and fro violently to the left outer canthus. Almost immediately after the movement of the left upper limb the right upper limb was raised and the body was forcibly turned to the left. The tonic contraction of the left hand and face were now succeeded by a clonic contracture of all the limbs of the body. During the tonic contracture the left angle of the mouth was violently drawn upward, the eyelids were alternately opened and closed on both sides, but about three times as rapidly on the left side as on the right. The convulsions sometimes would start in the left side of the face, or again would start simultaneously in the left side of the face and left arm or the right limb. In the majority of instances, however, the convulsion would start with movements of the left face or the left hand.

There was present also a complete left hemiplegia, flaccid in

character. The reflexes were increased on both sides, more on the left. The Babinski reflex was present on this side and not on the right. Sensation for all forms was lost completely over the left side. The sense of position was also lost in the left upper and lower limbs and she was unable to recognize any object placed in the left hand.

She was able to look upward and downward with both eyes equally and well. She could look to the right and when this was done the right eyeball was not brought to the outer canthus by one-fourth inch, the left eyeball, however, was fully deviated to the internal canthus. Associated ocular movements to the left were impossible.

Patient died three days after her admission to the hospital.

Autopsy.—Fracture of the cranial bone was found starting at about one-half inch above the ear and extending downward almost to the foramen magnum. The line of another fracture extended from a point between the foramen magnum directly backward to the right of the lateral sinus. Extensive hemorrhages were found occupying the right frontal pole, this extending in its posterior aspect to the foot of the second frontal convolution and lower part of the precentral convolution. Small hemorrhages were also found involving the right angular gyrus and the right occipital point. Horizontal section of the brain showed the hemorrhage to be cortical in all these points and not involving the white substance in any portion.

CASE 4.—S., **adult male**, was admitted to Philadelphia General Hospital, Dec. 9, 1902, to the service of Dr. Mills.

Nothing could be obtained of his past history as he was admitted in a stuporous condition and his identity was unknown. A complete left hemiplegia was present. The tendon reflexes were exaggerated, more so on the left side. The

Fig. 2.—Area of softening involving the caudate nucleus and lenticular nucleus, with a fresh hemorrhage underneath the angular gyrus. Clinically, hemiplegia with temporary hemianesthesia and hemianopsia was demonstrated. The two latter symptoms were probably due to the shock of the hemorrhage (Case 16).

Babinski reflex was present on this side. He apparently had a complete left hemiplegia with left hemianesthesia and left hemianopsia. The pupils did not react to light or accommodation on either side. Patient was unable to turn his eyes in associated movements to the right. He died three days after his stroke.

Autopsy.—Several large hemorrhages were found involving the greater portion of the right parietal convolution and extending forward beyond the Rolandic fissure into the back part of the frontal lobe and posteriorly in the occipital lobe.

CASE 5.—B., male, aged 60, a weaver, was admitted to the nervous wards of the Philadelphia General Hospital, in the service of Dr. Spiller, April 4, 1903.

History.—He had syphilis when 30, but otherwise his past history was of no importance. When admitted to the hospital he complained of weakness and stiffness in both lower limbs which he had had for the previous six months, and also some difficulty in talking and swallowing. There was no history of apoplectic attacks.

Examination.—His gait was stiff, his steps were short; station was normal with eyes open and closed; speech was bulbar, it being dull, monotonous and indistinct. He had dribbling of saliva, difficulty in chewing and eating and would even choke. There was no apparent weakness in any of the cranial nerves. The lower portion of the face seemed atrophied, but no tremors were present either here or in the tongue. The upper and lower limbs were weak and spastic, especially the left; all the tendon reflexes on both sides were exaggerated, especially on the left. Ankle clonus was present on both sides and the Babinski reflex was typical on the left and uncertain on the right. Sensation was normal for all forms everywhere. Some atrophy was present on both sides in the thenar and hypothenar eminences, especially on the left side. Some general atrophy was also present.

Diagnosis.—The patient was regarded as a questionable case of bulbar palsy; the slow progress and the absence of more involvement of the cranial nerves and of fibrillary tremors, making the diagnosis of pseudobulbar palsy possible.

Clinical History.—The condition of the patient gradually became worse, the bulbar symptoms becoming more marked. Two days before his death he suddenly became unconscious and had convulsions, clonic in character, these being limited entirely to the right side. When examined by Dr. Spiller (who made the following observations) the patient was found in an entirely unconscious condition, paying no attention when his name was called; breathing was stertorous and the right cheek was puffed out as though that side of the face was paralyzed. The right upper and lower limb was raised, and dropped like a flail, and irritation of these parts did not elicit any movement. The reflexes were more exaggerated on the right side and this side was more spastic. The Babinski response was prompt on each side. The head and eyes were deviated to the left. If the head was forcibly turned to the right it would soon forcibly turn back to the left. Slight irregular lateral jerkings of the eyeballs were present. The right pupil was larger than the left and the reaction of the iris to the light was slightly present. The deviation of the head and eyes persisted until the following day, when the patient died.

Autopsy.—The case proved to be one of pseudobulbar palsy, as a scar of an old hemorrhage was found in each lenticular nucleus. Besides a recent hemorrhage was found in the left occipito-temporal region extending to the cortex. This hemorrhage was in the posterior portion of the first and second left temporal convolutions and just below the angular gyrus. The area involved was 4 cm. deep and 1.2 cm. in its greatest width.

CASE 6.—G., a woman, aged 80, a domestic, was admitted to the nervous wards of the Philadelphia General Hospital, Oct. 12, 1905, in the service of Dr. Mills. Nothing was known either of the family or of past history. She had a history of suddenly developing numbness of the left hand, followed by pain and convulsions limited to the left face and hand and weakness in these parts.

Examination.—When examined by Dr. McConnell, the patient showed a distinct weakness of the lower part of the left face and of the left upper limb, this weakness in the limb being more marked in the distal parts. The other limbs were not involved. Sensation for touch and pain were normal everywhere. The reflexes in the left upper limb were exaggerated, but the other parts were normal. During the examination the left side of the face and the left hand were the seat of intermittent convulsive movements, the head being drawn somewhat to the left and the left angle of the mouth upward and outward, closing both eyelids and wrinkling the brow, with dilatation of the left nostril. The left platysma muscle was also in contraction. There was no movement of the eyeballs during the convulsion (Dr. McConnell was positive of this, for he observed her especially with this purpose in view). The convulsion would last for two minutes and did not involve any other portion of the body. The patient was perfectly clear in mentality during the attacks and would answer questions and obey commands directly after the convulsions were over.

Examination of the eyes showed the pupils to be moderately dilated and round, the response to light and accommodation being normal. The left ocular and palpebral conjunctivæ were greatly inflamed. Associated ocular movements upward and to the left were greatly impaired, being in fact almost entirely lost, the loss of upward movement being more marked in the

right than in the left eye. The paralysis of associated ocular movements persisted until her death, which occurred four days after her admission to the wards.

Autopsy.—An area of softening was found in the middle of the right precentral gyrus, this softening extending downward as far as and not involving any of the frontal convolutions. A fresh hemorrhage was found in the posterior portion of the occipital cortex, this hemorrhage being 2.5 cm. from the occipital bone. It was 2.5 cm. wide and 2. cm. deep, extending into the white matter and possibly involved the outer part of the optic radiations. The hemorrhage was posterior and inferior to the angular gyrus and very close to it.

Dr. Mills recorded the complete history of this important case before the American Neurological Association, in Boston, June 4 and 5, 1906, in a paper entitled, "Focal Encephalitis."

CASE 7.—McC., a woman, about 50, a patient of Dr. Crothers, of Chester, was seen in consultation by Dr. Mills and myself.

History.—Some notes were obtained from one of her relatives who had been with her constantly for a year or two. This relative stated that the first symptom of which the patient complained were flashes of light which she always saw from the left side. Later the niece observed that she would stumble against objects which were placed on the left, as the left side of the door through which she was passing. This tendency grew worse as time went on and probably indicated a left homonymous hemianopsia. She began to suffer from agonizing headaches, and still later developed nausea and vomiting. It was not until nearly a year after the visual symptoms appeared that she began to develop weakness in the left arm and leg.

Examination.—When she first came under observation patient had a left hemiplegia, the limbs being somewhat contracted. The tendon reflexes were prompt on both sides, but more so on the left, and the Babinski response was present on this side. The patient's mentality was not of the best and it was impossible to tell the state of the sensation. The associated ocular movements were normal to the right and downwards; upward movements were limited, but associated ocular movement to the left was impossible. The pupils were equal and the iritic reflexes were normal.

Eye examination by Dr. C. I. Stiteler showed vision, O. D., 5/9; in O. S., 5/12. The pupils reacted normally, the media in O. D. was slightly hazy and the outline of the nerve head could clearly be seen only at the upper temporal border, the rest of the nerve being very indistinct and somewhat swollen, especially at the lower border where the margin could not be seen. The retinal vessels were enlarged. In O. S., the media was slightly hazy; the nerve head was normal.

Operation.—There were besides, intense headaches, and some nausea and vomiting. Because of these symptoms of brain tumor an operation was decided on in the motor area. After the operation the patient became considerably better and lived comfortably for two months. In this period homonymous hemianopsia (left lateral) was clearly apparent. Dr. Crothers, under whose care she was, stated that she would never voluntarily look to the left, but that she could look upward, downward and to the right normally; but that towards the last he was able to get her, after violent effort, to look to the right.

Autopsy.—A large tumor was found filling up the whole of the right occipital lobe, extending very nearly to the surface but not breaking into the cortex. The convolutions and fissures over this tumor were much flattened. The tumor extended to the posterior part of the corpus callosum and displaced forward the structures anterior to this. Just at the anterior border of the tumor the wound made by the surgeon at the time of the operation could be found. The angular and supra-marginal gyri were involved in the tumor.

CASE 8.—H., woman, aged 60, a cook, was admitted to the Philadelphia General Hospital, Dec. 15, 1904, in the service of Dr. Mills.

History.—Five days before admission to the hospital the patient suddenly became unconscious and developed a complete right hemiplegia.

Examination.—She was unconscious on admission; the paralysis on the right side was complete and flaccid in character. The reflexes on each side were diminished, but the Babinski reflex was present on the right. The patient soon recovered consciousness and was able to obey commands; sensation was not disturbed and there was no hemianopsia. Motor aphasia was well marked. The following notes were made by Dr. Pemberton, the resident physician: "The right pupil is contracted and apparently immobile to light. The left pupil is dilated and fixed. The media of both eyes is very cloudy, especially the left, which shows a cataract and a marked arcus senilis; accommodation seems to be impossible. The patient looks straight ahead and she cannot apparently move her eyes in any direction when told to do so, although she evidently understands commands and makes an effort to obey, as shown by slight turning of the head."

The patient died nineteen days after the appearance of the apoplectic symptoms.

Autopsy.—A thrombus of the left middle cerebral artery was found, with softening of the brain in the precentral, postcentral and the whole of the parietal convolutions, that is, in the area supplied by the middle cerebral artery. The softening extended to the lenticular nucleus, but did not invade it, as the thrombus was beyond the point where the arteries to the basilar ganglia arise. The posterior portion of the second frontal convolution was not involved.

CASE 9.—H., a woman, aged 70, was admitted to Philadelphia General Hospital, June 23, 1903, to the service of Dr. Spiller, with a history of right hemiplegia, one day in duration.

Examination.—The paralysis on the right side was complete and flaccid in character. The patient was stuporous and could not be aroused. The reflexes were diminished, this being more so on the paralyzed side. The Babinski reflex was obtained on the right side; not on the left. Pin prick seemed to be perceived on the paralyzed side, as shown by the movements of the opposing limbs. There was decided conjugate deviation of the head and eyes to the left. When the tongue was protruded it was also protruded to the left.

Patient died eight days after her stroke.

Autopsy.—A recent hemorrhage was found in the left optic thalamus, destroying the greater part of the thalamus and extending into the posterior limb of the left internal capsule, but apparently not invading the lenticular nucleus or involving the optic radiations.

CASE 10.—H., a tailor, aged 80, was admitted to Philadelphia General Hospital, March 6, 1906, from the out-wards, to the service of Dr. Spiller.

Examination.—A complete right hemiplegia was present, the paralysis being flaccid in type. The tendon reflexes were increased on the right side and the Babinski response was prompt. On the left side the reflexes were normal. Pin prick was not recognized on the right side, but on the left side any irritation would cause prompt movement. It was impossible to tell whether hemianopsia was present. There was also incontinence of urine and feces. The patient's head was deviated to the left and when it was forcibly turned to the right or to the median line it was immediately turned back to the left. There was also a conjugate deviation of the eyes to the left.

Examination two days later showed practically the same condition, the deviation of the head and eyes being as marked as when examined the first time. There were present besides, constant horizontal movements of the eye, this being perceived with the eyes open, and also when they were shut, the movements being transmitted to the lids. These lateral movements were also to the left. Irregular and jerking movements were also present in the left limbs. Examintion two days after this and six days after his stroke, still denoted the same condition, the head not being deviated so strongly. The deviation of the eyes, however, was as marked as ever. Any movements of the head would always be to the left and never to the right, no matter where the irritation was made. The pupils were small and equal; the light reaction was normal. All movements of the eyeballs were to the left and not to the right. The patient died seven days after his stroke.

Autopsy.—A recent large hemorrhage was found filling up the posterior horn and descending horn of the left lateral ventricle, but not into the anterior horn, and also involving a large part of the lenticular nucleus, doubtless disturbing the function of the left optic radiations and involving also the posterior limb of the internal capsule and the optic thalamus.

CASE 11.—D., a man, aged 52, with a history of syphilis and alcoholism, was admitted to the nervous wards of the Philadelphia General Hospital, Sept. 17, 1902, in the service of Dr. C. S. Potts, to whom I am indebted for the material of this case. A day before his admission the patient had an apoplectic attack, with a resulting left hemiplegia.

Examination.—The paralysis was complete and flaccid, the tendon reflexes were not exaggerated on either side, but the Babinski response was obtained on the left side. A hypesthesia for touch and pain was apparently present in the paralyzed side. The patient had conjugate deviation of the eyes to the right, with inability to turn the eyes to the left.

Autopsy.—An area of softening was found in the lenticular nucleus of the right side, and extending into the posterior limb of the internal capsule, but not invading the optic radiations.

CASE 12.—R., a man, aged 77, was admitted to the nervous wards of the Philadelphia General Hospital, July 19, 1904, in the service of Dr. Spiller.

History.—A sudden attack of unconsciousness the day before, resulting in a left hemiplegia.

Examination.—On the following day examination showed a complete left hemiplegia, the paralysis being flaccid. The tendon reflexes were lost on the paralyzed side and were diminished on the sound side. The Babinski response was obtained on the left side. Pin prick was not recognized at any portion of the left side, but was promptly recognized on the right side. The patient was not totally unconscious, as he would obey commands, as sticking out his tongue and lifting up his limbs of his sound side. There was also present incontinence of urine and feces. The eyes were distinctly deviated to the right, but there was no deviation of the head. It was impossible to tell if hemianopsia was present.

The patient died six days after his stroke.

Autopsy.—A large hemorrhage was found destroying the posterior portion of the right lenticular nucleus, extending backward beyond the nucleus almost to the angular gyrus and destroying the posterior part of the posterior limb of the internal capsule. This large hemorrhage did not involve the cortex at any point, although in one part minute hemorrhages were found in a portion of the cortex about the island of Reil.

CASE 13.—S., a man, aged 51, was admitted to the Philadelphia General Hospital, Sept. 21, 1903, into the service of Dr. Mills.

History.—He had been admitted to the hospital several years previously with a history of right hemiplegia, from which he partially recovered.

After being in the hospital for two years he suddenly had an attack of unconsciousness. The resident physician, Dr. Maier, found him in a stuporous condition, the right arm and leg being completely paralyzed and the right face drooping. Some spasticity was present on this side and the reflexes were exaggerated. The head was not deviated to either side; the eyes were turned up and oscillated slightly from the right to the left. He died two days afterwards.

Autopsy.—A lesion was found in the left lenticular nucleus not extending apparently into the internal capsule, and reaching and invading the claustrum, extreme capsule and not reaching the cortex. The lesion must have involved the fibers underneath the angular gyrus.

CASE 14.—A. was an old right hemiplegic, who had for a long time been in the nervous wards of the University Hospital. His previous records were lost.

One morning he suddenly became unconscious and had convulsions, which were limited to the left upper and lower limbs and the left side of the face. The eyes were turned in conjugate deviation to the right. Both upper and lower limbs were flaccid, there being, however, more tonicity in the left side. The tendon reflexes were lost in all the limbs, but the Babinski response was distinct on the right side. The patient died the same day.

Autopsy.—The ventricles were found to be considerably dilated and the scar of an old cyst was found in the external portion of the left lenticular nucleus and involving the extreme capsule.

CASE 15.—C., a woman, was admitted to the nervous wards of the Philadelphia General Hospital, July 12, 1904, into the service of Dr. Spiller.

History.—The patient then had a paresis on the left side of the body. Feb. 22, 1905, she suddenly became paralyzed, about seven months after her first stroke.

At this time Dr. Spiller made the following dictation: "The patient is in a deep stupor and is unable to understand anything said to her. The eyeballs are deviated to the right and there are frequent irregular jerky movements to the right, the left edge of the cornea going but very little beyond the median point of the palpebral fissure during these movements. These clonic movements of the eyeballs are suggestive of an irritation of the left cortical center of the ocular muscles."

When she was seen by Dr. Pemberton, the resident physician, somewhat previously, but on the same day, the eyes were turned to the left, and there were no jerky movements of the eyeballs. She had therefore conjugate deviation of the eyes to the left, but this was at the time when there was no irritation of the eye muscles, and therefore would seem to indicate that she was looking at her lesion. The head was not stiff and remained where placed; there was also a slight tendency of the eyeballs to be drawn upward as well as to the right. The pupils were dilated, and equally so, and did not respond to light. Occasionally an involuntary jerking of the left upper limb was observed. Both upper and lower limbs were flexed and the reflexes were diminished, the left more than the right. Babinski response was present on the left but not on the right. She died the following day.

Diagnosis.—Left hemiplegia.

Autopsy.—A limited area of sclerosis of the anterior portion of the right second frontal convolution was noted. There was also a cyst in the anterior portion of the left lenticular nucleus. An area of softening in the right frontal lobe at the frontal point was found. The lateral ventricles were also somewhat dilated.

CASE 16.—C., a woman, aged 35, was admitted to the Philadelphia General Hospital, Dec. 1, 1905, to the service of Dr. Hirst.

History.—Patient was delivered of a child four weeks previously, since which time she had been having a temperature and had apparently been septic. Two days before her admission she suddenly fell, became unconscious, and has not been able to speak since.

Examination.—She was examined five days after her admission by Dr. McConnell and myself. The patient then had a complete right hemiplegia, the limbs on the paralyzed side being spastic and contracted in the usual hemiplegic position, the reflexes were exaggerated on both sides, the right more than the left, and the Babinski response was present on this side. The patient was not unconscious and would obey commands. The head and eyes had been deviated since her admission constantly to the left. Pin prick or touch on the right side could not be recognized anywhere, but on the left side sensation was promptly recognized. Objects were not recognized in the right visual fields of either eye, as was demonstrated by the feeding cup and other tests, therefore, right homonymous hemianopsia was present. The patient was aphasic, but could understand questions and would nod responses. The right masseter muscle was in a constant state of contraction, causing the right jaw to be locked. She was able to turn her eyeballs upward, downward, and to the left, but could not turn them to the right. When examined a day after this the patient could turn her eyes a little to the right, but not normally so. She died a few days afterwards as the result of a double pneumonia.

Autopsy.—An area of red softening was found, involving the left caudate and the left lenticular nucleus. A small hemorrhage was also found in the cortex of the upper portion of the first temporal convolution just below and anterior to the angular gyrus.

DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia, agreed almost, although not entirely, with Dr. Weisenburg's conclusions. He does not believe that the only cortical ocular center is situated in the posterior portions of the second and third frontal convolutions. That the only actively functioning center in the whole human being is situated in this region can be accepted as a practical fact based on clinical and pathologic observations. Dr. Mills believes that there is a motor region

in the lower animals and in man for every cortical region of the special senses. For practical purposes of diagnosis, however, the only one that claims attention in the human being is the musculocutaneous or main motor region. The human being has an auditory motor region, a visuo-motor region, etc. As shown by the investigations of Flechsig and the experiments of Grünbaum and Sherrington, Schäfer and others, motor centers are situated along the calcarine and parieto-occipital fissures and the posterior extremity of the intraparietal fissure. These centers may be largely in abeyance in the human being, their place having been taken as the result of racial and individual evolution by the more frequently employed oculomotor centers of the main motor area. Dr. Weisenburg, he said, has not laid particular stress on what appears to be a matter of much clinical importance, namely, the difference between the results caused by a lesion of the oculomotor cortical center of one side, and lesions occurring simultaneously or successively in these centers on both sides of the brain. The oculomotor centers of one side are probably effective in the control of movements of both sides. Therefore, lesions of one side may fail to give persisting symptoms. Dr. Mills said that the view advocated by Dr. Weisenburg is probably correct, namely, that the nuclei of the nerves supplying the internal recti and those supplying the external recti of both sides are connected by special tracts.

DR. W. G. SPILLER, Philadelphia, considers that perhaps one of the most important conclusions stated by Dr. Weisenburg in his report of the sixteen cases with necropsy, is that conjugate deviation of the head and eyes can not be used as a clinical sign of lesions of any particular part of the brain. Dr. Weisenburg's views resemble those entertained by certain neurologists in regard to word-seeing. By some it is held that the center for word-seeing is in the angular gyrus of the left side; by others that the loss of word-seeing produced by a lesion in this gyrus is caused by a destruction of the fibers passing beneath this gyrus to the first temporal convolution. The latter resembles the view advanced by Dr. Weisenburg, viz., that there is no definite center in the angular gyrus for conjugate movement of the head, and that when deviation occurs from a lesion here, it is the result of destruction of the fibers beneath the cortex. Numerous observations are needed to establish this view. Dr. Spiller agrees with Dr. Weisenburg that there are probably separate centers for the movements of the head and eyes. In some cases there is deviation of the head without conjugate deviation of the eyes, while in other cases the two may exist together, and not infrequently one will disappear without the other. Dr. Weisenburg's idea that there may be a latent deviation in every case of apoplexy with hemiplegia, shown by the inability of the patient to look toward the paralyzed side, is interesting, Dr. Spiller said, but difficult to prove, as usually consciousness is lost and it is impossible to obtain voluntary movement of the eyes. Cases occur, however, in which this examination may be made.

Dr. Spiller cautioned against the improper estimation of incoördinate movements of the eyeballs present shortly before death. Such movements at that time have little diagnostic value. In his paper, read before the American Neurological Association, in 1905, on "Paralysis of Associated Ocular Movements," he made no reference to congenital cases, or to experimental work on animals, but referred only to the condition as acquired by man. In that paper he expressed the view that persistent paralysis of associated upward movement of the eyeballs is due to a lesion near the oculomotor center. If there could be a lesion in each cortical center for the movements of the eyes, they might together produce associated upward paralysis, but lesions are not likely to occur exactly symmetrically on the two sides of the brain. Von Monakow, he believes, reports a case in which there was a lesion between the oculomotor centers beneath the floor of the aqueduct of Sylvius; there was no loss of individual movement of the eyeballs, but there were no associated movements because of the destruction of the connecting fibers. Since the presentation of his paper in 1905, Dr. Spiller has had the opportunity of observing two more cases of paralysis of associated upward movement of the eyeballs. One of these patients was under the care of Dr. Potts, and the condition seemed to be caused by a lesion in the optic thalamus, as in connection with other symptoms, sensory hemiplegia persisted and motor hemiplegia largely disappeared. The other case was that of a patient of Dr. Langdon, in the service of Dr. George E. de Schweinitz, seen by Dr. Spiller in consultation. A young man, aged 17, who had been perfectly healthy until March, 1906, began to have disturbance of vision, and had to leave work; he complained of stiffness in his limbs and joints. When seen on May 12, 1906, he was found to have complete paralysis of upward movement of the eyeballs, choked disc on the right side, loss of the patellar tendon reflex and of the Achilles tendon reflex, and hemianopsia, but no paralysis of the limbs. He entirely recovered. It was probably a case of polioencephalitis superior, for which no cause could be found.

In one of his cases reported in his paper, of complete paralysis of upward associated movement of the eyeballs, death occurred in May, 1906. Dr. Spiller was so fortunate as to obtain the patient's brain through Dr. Cadbury. Shortly before going to Boston Dr. Spiller examined a number of sections from this case. There was nothing abnormal that could be seen by the naked eye. It was only by staining section after section and examining each very carefully that he was able to discover a very minute tumor of the cerebral peduncle near the oculomotor center. Dr. Spiller still believes that when there is persistent paralysis of upward associated movements of the eyeballs it is due to a lesion near the oculomotor nuclei.

DR. T. H. WEISENBURG, Philadelphia, said that in his paper reference to the cases in which lesions involve the oculomotor centers of either side was only brief, as these cases are very rare, and besides a critical study has shown that in not one were the lesions limited to the oculomotor centers. Regarding Dr. Mills' opinion that there is a distinct motorocular center in the occipital lobe, Dr. Weisenburg said he is not fully in accord because of the lack of such evidence. He has no reason, however, not to think so for if Dr. Mills holds any view it is only a question of time when it will be proved to be true.

ARSENIURETED HYDROGEN POISONING.

WITH REPORT OF FIVE CASES.

NOBLE WILEY JONES, M.D.

PORTLAND, ORE.

Our knowledge of the toxic effect of arseniureted hydrogen gas, ASH_3, on the animal body is limited yet to the experimental results of certain investigators of the origin of icterus, notably of Stadelmann, Minkowsky and Naunyn and Eppinger and to the scattered clinical reports of less than one hundred cases of poisoning in man. It was believed at the time of the occurrence of these five cases here detailed that numerous others would be reported from the different mining districts which had made use of the MacArthur-Forest cyanid process in the working of low grade gold ores, owing to the numerous attempts to smelt locally the zinc "product," which contains the gold values. But after the lapse of eight years these cases remain the only instances of such poisoning from this source that have come to my attention. Hunting through the meager literature of the subject, I have been able to collect the reports of fifty-five cases. They are all isolated in nature; some of them in the persons of experimental chemists, others in laborers in anilin dye works, several among makers of toy balloons. Only in one instance, reported by Trost in 1873, was this form of arsenic poisoning the result of a metallurgical process. Here it concerned the technical recovery of silver from lead

ore, in the course of which procedure zinc was added to the ore charge, smelted, and a zinc-silver product obtained, which, in turn, was treated with a warm dilute hydrochloric acid solution to render the zinc soluble and the silver insoluble as their respective chlorids. Both the zinc and the hydrochloric acid contained arsenic as an impurity, the latter 0.027 per cent., and as a result nine workers became poisoned with the generated arseniureted hydrogen gas, three of them fatally.

This compound of arsenic has been known since 1775, when Scheele discovered it while experimenting with arsenic acid. Its intense toxic properties were not known until Gehlin, a Munich chemist, fell victim to it in 1815. Producing the gas intentionally from known arsenic salts, he attempted to recognize its presence by the odor and inhaled enough to cause his death nine days later. The briefly reported symptomatology of this, the first case, corresponds closely with all others observed. Since this time it has been closely studied chemically, and its production is known to occur under the following conditions: (a) By the action of nascent hydrogen on a soluble salt of arsenic; (b) by the action of dilute HCl or H_2SO_4 on the arsenids of zinc or tin; (c) by the action of water on the arsenids of alkali metals, and (d) by the action of a hot solution of potash and powdered zinc on reducible compounds of arsenic. It is a colorless gas with a strong odor of garlic; soluble in 5 volumes of water, of neutral reaction, and possessing a density of about three times that of air. It oxidizes slowly in the presence of air and moisture with deposition of the element. It burns with a greenish, almost colorless flame, with formation of arsenous oxid, As_2O_3. Its mixtures with air or oxygen are explosive. Just why arseniureted hydrogen is the most poisonous of all the mineral compounds of arsenic is not definitely known. It contains a relatively high percentage of arsenic. It is a diffusible gas and capable of rapid absorption from the lung tissue. But it is possible that its great toxicity is due, in part at least, to certain properties acquired from its combination with hydrogen.

The salient points in the clinical histories of the published cases are best reviewed in tabular form, more detailed individual description being unnecessary, as all cases showed much the same symptomatology, and many of them have been reviewed by other writers, namely, by Geigy and Becker.

For the following brief clinical reports of these five cases I am indebted to Dr. A. L. Castleman, then of Mercur, Camp Floyd Mining District, Utah, and to Dr. A. J. Hosmer, of Salt Lake City, under whose care the patients were:

CASE 1.—1896. D. C. J., metallurgist; a young, well built, healthy man.

History.—About two hours after having worked with the refining of zinc product from an experimental cyanid mill, he was suddenly seized with a feeling of intense malaise and chilliness, soon followed by intense abdominal pain which radiated toward the back. The first urine voided was dark and bloody; urination became more frequent and a larger quantity than normal in 24 hours was passed. The bloody character subsided slowly, the urine becoming clear after the sixth day. Jaundice set in early; it was of a distinct yellowish type like that of an acute catarrhal jaundice, but soon becoming of a bronze color. This disappeared slowly during convalescence. Slight fever, always under 100 F., was noted during the first three days. The pulse was rapid and easily compressible. There was no dyspnea at any time noted. The patient was not allowed active movement. The liver, spleen and kidneys were never palpable. The severely acute symptoms disappeared after three days. Convalescence required five weeks, but a moderate degree of anemia remained for several weeks more. At time of writing, 10 years from time of illness, the patient is entirely well, shows no signs of kidney lesions and has passed examinations for life insurance.

CASE 2.—Aug. 22, 1898. J. W., helper; aged 34; good health.

History.—The man was suddenly overcome about 5:30 p. m., while at work over a vat in the zinc cyanid refining plant of the Golden Gate Gold Mining and Milling Company, Mercur, Utah. The vat contained the zinc cyanid product, sulphuric acid and various impurities from the ore, especially large traces of arsenic. The patient was carried into the open air by the other workmen, where Dr. Castleman found him a few minutes later. He was then in a semi-dazed condition; could not stand; complained of coldness, numbness and cramping of the extremities and of severe nausea and vomiting. The vomitus was the normal stomach contents. The skin was livid in appearance, pulse 72, temperature normal. A small quantity of urine voided at this time looked normal to the eye. The patient was removed to his house. At 6:30 p. m. severe abdominal pain set in, which radiated into back and loins, and of which he complained bitterly, although he remained in a semi-stupor. Vomiting continued every 15 or 20 minutes. Diarrhea was present. At 7 p. m. the condition of the patient was the same and naturally voided urine appeared normal. Temperature was normal. The patient later became very restless, even when free from pain. At 10 p. m. hiccough set in and his skin began rapidly to assume a bronzed color. At this time he tried to pass urine but failed. There was much vesical tenesmus. Catheterization afforded one ounce of black urine containing much heavy sediment. This was the last urine obtained although frequent catheterization was resorted to. The following morning the skin was of a deeper bronze or copper color. Vomiting and hiccoughing continued at frequent intervals. The stools were dark and glairy in appearance. The vomitus was stained a green color. Pulse persisted from 110 to 120, with some irregularity and low tension. There was no delirium, but the stuporous condition remained. The patient lost strength until 10 p. m. of August 23, when he became unconscious and died the following morning, 60 hours after his exposure to the gas.

Examination of Urine.—I later examined the catheterized urine and found it to contain large quantities of methemoglobin, some bile pigment, large quantities of detritus, seemingly disintegrated red blood corpuscles, and some washed-out pale looking intact corpuscles. Small traces of arsenic were found by the Reinsch test, but not with a Marsh apparatus. The stools contained much bile pigment. Blood smears made by Dr. Hosmer showed an evident anemia due more to a solution of the hemoglobin contents than to an actual disintegration of the red cells. Blood counts were not made.

Autopsy.—Six hours after death. Body of a well developed and nourished man. Rigidity was present and some posterior lividity. Skin was uniformly copper colored, darker over face, neck and upper chest. Subcutaneous fatty tissue and muscle were copper colored. Abdominal and pleural cavities were negative except for slight brownish staining. Lungs were negative. Pericardial sac was filled with brownish fluid. Myocardium was deeply copper stained, otherwise negative. Stomach contained small amount of mucus. Scattered submucous ecchymoses appeared throughout, more marked at cardiac end of lesser curvature. The intestinal mucous membrane was uniformly injected; the descending colon was small and contracted. Liver weighed 2,600 grams; it was dark colored and the cut surface was very bloody; lobular markings were fairly distinct. The gall bladder was distended with a large amount of black, dense, tarry bile. Spleen weighed 320 grams, black; pulp soft and bloody. Malpighian bodies were visible. Kidneys together weighed 290 grams; they were dark purple colored. Capsule stripped readily. On the cut surface a large, hemorrhagic, undifferentiated appearance was seen, soft and bloody. Cortical markings were lost. The renal pelvis was empty and mucous membrane smooth. Bladder was small, empty and contracted to large walnut size. Bone marrow of ribs and right femur was stained deep copper color. Other organs were negative. Brain and cord were not examined.

Microscopic Examination.—The tissues had been hardened in 70 per cent. alcohol. Preparations were made with (a) hemotoxylin and eosin; (b) alum carmin, potassium ferrocyanid and hydrochloric acid, and (c) alum carmin, equal part solution of ferrocyanid and ferrocyanid of potassium and hydrochloric acid.

Liver: The structure of cords of liver cell is well maintained, the nuclei staining well. Masses of orange, brown and black pigment granules are seen in all cells, more marked in the region of the intralobular veins and at the peripheries. The radicles of the portal vein are filled more or less with coagulum and corpuscle débris. There is an absence of round-cell infiltration. There is an absence of Prussian blue precipitation in the cyanid preparations excepting in the contents of the hepatic veins. This is stained quite uniformly bluish.

Kidneys: The outlines of the tubules and the glomeruli are fairly well retained. The capsules of the latter are filled with a lightly granular coagulum containing some few isolated well-stained cells. The convoluted tubules are thoroughly disintegrated. A heavy granular coagulum fills each lumen. The cuboidal and short columnar cells of the small collecting tubules have undergone the least destruction of any, yet they all show necrotic changes. There is an irregularly uniform, slight increase of the interstitial connective tissue. Nowhere is any marked round-cell infiltration noticed. Formed blood cells are sparingly seen. Throughout the cortex the Prussian blue reaction is seen only in scattered areas. Immediately beneath the capsule is an area 1 to 2 m.m. thick which shows an almost structureless condition. Here the cyanid reaction is well marked. In certain portions of the medulla this reaction is prominent. It seems to bear no relation to the amount or location of corpuscle débris.

Spleen: The splenic pulp is loosely arranged. The Malpighian corpuscles numerous and small. Certain large areas of necrosis are seen, composed of a reticulated coagulum, taking an eosin stain well, and containing in its meshes corpuscle débris and many pale corpuscles from which the hemoglobin contents have been removed. No extra vascular hemorrhage is seen. No evidence of the iron reaction is found in the cyanid-treated preparations.

Bone Marrow: Normal structure. Blood vessels contain more or less coagulated mass of débris in which there is considerable brownish or black pigment granules. Some of these granules give a Prussian blue reaction; most of them do not. About a few of the vessels a diffuse blue staining is seen, not associated with the granules nor extending into the lumen of the vessel.

Tissues from other organs were not received. Pieces of the kidney treated by the Reinsch test gave traces of arsenic. The liver and spleen did not do this.

Anatomic Diagnosis.—Acute hemorrhagic nephritis; acute splenic tumor with areas of necrosis; acute hepatic tumor; acute disseminated submucous hemorrhages of stomach and intestines, mild; diffuse red blood corpuscle destruction; diffuse discoloration of superficial and deep tissues.

CASE 3.—L. G., assayer, a well developed, healthy man, was exposed to generating arseniureted hydrogen gas at the same time as the patients in Cases 2, 4 and 5.

History.—Four and a half hours after exposure, while sitting in the doctor's office talking with him and feeling well, he suddenly became cold, weak, very pale and numb about the feet. He walked a short distance to his house with the help of a companion, but fell as he entered the door and could not rise. He was seized soon with nausea and considerable lumbar pain; no abdominal pain. His urine became rapidly bloody, remaining such for seven days. It was increased in amount. He began to turn yellow about the time of the beginning of his pain. This deepened in a day's time to a bronze and later took on a distinct greenish tinge. Temperature remained about 100 F. or less for three days, then went to normal. The pulse was accelerated, but of moderately good tension. Convalescence lasted six weeks, after which a decided anemia remained for some time. The patient is now living, is well and has never shown signs of kidney trouble.

CASE 4.—J. M., helper, a healthy man, suffered same exposure to gas as former two patients.

History.—He was taken sick in a similar way to patient in Case 3 while standing on the street, five hours after exposure. He was assisted home, and also fell to the ground on reaching the house and was unable to rise. He had walked probably the length of one and a half of the ordinary city blocks. The patient's symptoms were severe from the start. His urine became hemorrhagic and on the fourth day nearly ceased. After that until his death, on the ninth day, only from 5 to 10 c.c. of urine could be obtained in 24 hours by catheterization. An early jaundice passed rapidly into a brown color of the skin and scleræ. The pulse became rapid and weak, and toward the end the man became comatose and died without delirium or convulsions. No autopsy was obtained. Blood smears from this case showed the same washed-out appearance of the red cells, rather than an extensive erythrocyte destruction.

CASE 5.—A., helper, a healthy man, some time within 24 hours after exposure began to pass bloody urine and developed a jaundice like that of a mild acute catarrhal jaundice. His hemoglobinuria lasted four days, at the end of which time he returned to his work. His symptoms, consisting mostly of slight chilliness and malaise, were indefinite and unimportant in character. The patient made a complete recovery, is now living and is well.

ETIOLOGY.

Wherever the formation of arseniureted hydrogen, intentionally or unintentionally, is possible, poison cases will occasionally be met. With the extensive application of the MacArthur-Forest cyanid process in the handling of low grade gold ores, which has as its principle the solution of the gold values from the ore by means of a dilute potassium cyanid solution and the recovery of the values from this solution by its filtration through zinc dust or shavings, which precipitates the gold partly in the form of fine metallic gold and partly as a double cyanid salt of gold and zinc, it was expected that cases of arsenic poisoning from this source would be rapidly multiplied: First, because arsenic is a frequent constituent of ores and more or less of it passes into solution and is collected in the product, and, secondly, because it is often an impurity of the zinc and also of the sulphuric acid sometimes used in the refining of the product. However, no other cases have been reported from any of the mining districts in South Africa, Australia, or from this country where the cyanid process is extensively used, so that we are justified in placing these cases in the list of accidental poisonings which have occurred infrequently in the arts and in experimental laboratories.

Of the sixty cases here recorded, seventeen patients were scientific men or their students, fourteen were workers in metallurgical reduction works, seven in anilin dye works. Ten were Italian balloon peddlers who generated hydrogen gas from scraps of zinc and impure acid and made their own balloons. Barker's case is that of a man who was cleaning castings in a foundry with sulphuric acid. In the manufacture of chemicals, as zinc chlorid, these accidents have occurred, so that the possible source of this form of arsenic poisoning is wide, and one may wonder, indeed, that so few cases have been recorded.

PATHOLOGY.

The pathology of these cases differs in many ways from that of other arsenical salt poisonings. The blood and chief excretory organs receive the brunt of the effect of the gas—the blood directly, the kidneys both directly and indirectly. The skin is discolored from the deposition of pigment in it. The degree of color depends on the degree of transformation of the iron portion of this pigment. The lungs are usually nega-

TABLE OF CASES OF ARSENIURETED HYDROGEN POISONING.

		Occupation.	Recovery.	Death.	Days.	Appearance of First Symptoms.	First Symptoms.	Urinary Symptoms. (a) Hemoglobinuria.	(b) Duration of days.	(c) Anuria.	(d) Polyuria.	Skin Discoloration.	Type of Symptoms.	Dyspnea.	Splenic Tumor.	Fever.	Pulse.	Remarks.
1	Gehlin....1815	Chemist.....	..	+	9	1 hour...	Nausea.....	+	Death...	?	?	?	Severe.....	?	?	?	?	
2	Schindler..1836	Pharmacist.	+	..	49	3 hours..	Dizziness.....	+	5	0	..	Dark brown.	Moderate..	?	?	?	Weak, frequent.	
3	Taylor 1836	Chemist.....	..	+	24	?	?	....	?	..	..	?	?	?	?	?	?	
4	O'Reilly...1841	Chemist.....	..	+	7	Immediate.	Dizziness.....	+	Death...	0	..	Copper to greenish.	Severe.....	?	?	0	Weak, then forcible.	Postmortem.
5	Mouat.....1850	Chemist.....	+	..	22	1 hour...	Choking.....	+	?	0	..	Icteric.....	Moderate.	?	?	?	Full, hard, frequent.	Died later of uremia.
6	Vogel.....1851	Physicist.....	+	..	2	Immediate.	Weakness.....	+	1½	0	..	?	?	0	?	Fever..	Quiet.	
7	Ollivier....1863	Chemist	..	+	5	1 hour...	Headache	+	5	+	..	Earthy yellow.	Severe.....	+	+	?	110, full, regular.	
8	Chevallier.1863	Pharmacist..	+	..	?	8 to 10 hr.	Headache.....	....	?	..	..	?	Mild.....	?	?	?	?	
9	Vallette...1870	Chemist.....	..	+	30	Few minutes.	Nausea.....	+	?	?	..	Icteric.....	Moderate .	?	?	?	?	
	Vallette...1870	Worker.....	+	..	15	Few minutes.	Urinary;.....	+	?	?	..	Icteric.....	Severe.....	Labored.	?	?	?	
10	Ollivier...1872	Physicist. ..	+	..	19	6 hours..	Bloody urine..	+	3	?	..	Icteric.....	Moderate..	?	?	Fever..	?	
	Ollivier ..1872	Assistant....	+	..	Less.	6 hours..	Bloody urine.	+	?	?	..	Icteric.....	Mild	?	?	?	?	
11	Trost.....1873	Director.....	+	..	Few..	?	Unwell.....	?	?	?	..	?	Mild	?	?	?	?	
	Trost.....1873	Worker.....	+	..	19	Some hours.	Nausea.....	+	3	0	..	Icteric.....	Moderate.	Labored.	?	Fever.	100	
	Trost.....1873	Worker.....	+	..	?	5 hours..	Nausea.....	+	4	0	..	Dark yellow	Moderate..	?	?	Fever..	Rapid.	
	Trost.....1873	Worker.....	+	..	Few..	?	Slight symptoms.	....	?	..	..	?	Mild	?	?	?	?	
	Trost 1873	Worker	..	+	2	? hours..	Nausea, pros..	*	2	..	..	Yellow	Severe	?	?	?	160	
	Trost.....1873	Worker.....	..	+	6	? hours..	Nausea.....	+	6	+	..	Yellow, turgid.	Severe	?	?	38.5	160	
	Trost.....1873	Worker.....	..	+	3	? hours..	Nausea.....	+	3	+	..	Yellow, turgid.	Severe	?	?	?	?	
	Trost.....1873	Worker.....	+	..	? mo.	? hours..	Nausea.....	....	?	..	..	?	Moderate..	?	?	?	?	
	Trost..... 1873	Worker.....	+	..	? mo.	? hours..	Nausea.....	....	?	..	..	?	Moderate .	?	?	?	?	
	Trost.....1873	Worker.....	+	..	? mo.	? hour...	Nausea.....	....	?	..	..	?	Moderate .	?	?	?	?	
12	Wächter...1878	Balloon peddlers.	+	..	? wk.	1 hour...	Nausea.....	+	3	0	..	Yellow	Moderate .	30	+	38 6	100, full.	
	Wächter..1878	2d.....	+	..	45	1 hour...	Nausea.....	+	4	0	..	Lemon yellow.	Moderate .	36	0	38 /	108	
	Wächter..1878	3d.....	+	..	47	1 hour...	Nausea.....	+	9	0	..	Gray, icteric	Severe	36	+	38 2/	120, full.	
	Wächter ..1878	4th.....	..	+	10	1 hour...	Nausea.....	+	10	+	..	Lemon yel-to gray.	Severe	?	+	?	120	
13	Dütting....1888	Balloon peddlers.	..	+	6	? hour...	Nausea.....	+	6	+	..	Icteric to deep yellow gray.	Severe	?	0	?	?	Postmortem.
	Dütting...1888	2d.....	..	+	3	? hour...	Nausea.....	+	3	+	..	Yellow	Severe	?	?	?	?	Postmortem.
	Dütting...1888	3d.....	+	..	7	? hour...	Headache.....	+	4	0	..	Yellow	Mild.....	?	+	?	?	
	Dütting...1888	4th.....	+	..	10	? hour...	Headache.....	....	4	..	..	Gray yellow.	Mild.....	?	?	?	?	
	Dütting...1888	5th.....	+	..	16	? hour...	Headache.	....	4	..	..	Dirty yellow.	Mild.....	?	?	?	?	
	Dütting...1888	6th.....	+	..	9	? hour...	Headache.....	....	2	0	..	Icteric	Mild.....	?	?	Fever..	?	
14	Eitner.....1879	Physicist....	+	..	5	? hour...	Nausea.....	+	2	0	..	Icteric	Mild.....	?	?	?	?	
	Eitner.....1879	Physicist....	+	..	4	? hour...	Nausea.....	+	1	0	..	Icteric	Mild	?	?	?	?	
	Eitner.....1879	Student	+	..	?	? hour...	Unwell.....	+	?	0	..	Icteric	Mild.....	?	?	?	?	
	Eitner.....1879	Student	+	..	?	? hour...	Unwell.....	+	?	0	..	Icteric	Severe....	Free.	+	39.3	?.....	Postmortem. Uremia.
15	Coester...1884	Anilin worker.	..	+	13	? hour...	Nausea.....	+	13	+	..	Icteric	Mild	?	?	?	?	
	v. Ury-Benz, 1885.	Anilin worker.	+	..	8	? hour...	Nausea.....	+	4-6	0	..	Icteric	Mild	?	?	?	?	
		2d.....	+	..	8	? hour...	Nausea.....	....	4-6	0	..	Icteric	Mild	?	?	?	?	
16		3d.....	+	..	8	? hour...	Nausea.....	....	4-6	..	..	Icteric	Mild.....	?	?	?	?	
		4th.....	+	..	8	? hour...	Nausea.....	....	4-6	..	..	Icteric	Mild.....	?	?	?	?	
		5th.....	+	..	7	? hour...	Nausea.....	....	4-6	..	..	Icteric	Mild.....	?	?	?	?	
17	Becker....1885	Student.....	..	+	3	2½ hours	Loin pain	+	2½	+	..	Bronze....	Severe.....	?	0	36.8 to 38.3	104.....	Postmortem.
18	Geigy....1887 8	Factory hand.	..	+	7	? hour...	Nausea.....	+	7	+	..	Bronze to yellowish.	Severe.....	46 24	0	37.2	104.....	Postmortem.
	Geigy....1887-8	Anilin worker.	+	..	16	? hour ..	Nausea.....	+	6	0	..	Brown.....	Moderate .	20	0	37 9	100	
19	Schickart ‡1891																	
20	Martin ..1893-4	Foreman in chemical works.	..	+	5	21 hours..	Generally ill, pain in abdomen.	+	5	†	..	Deep yellow.	Severe.....	0	?	0	104, irregular at times.	
		Laborer.....	..	+	6	Soon.....	Vomiting, pain in back.	?	4	+	..	Jaundice..	Severe.....	?	0	?	?.....	Postmortem.
		2d.....	..	+	6	Soon.....	Vomiting, pain in back and over liver.	?	4	+	..	With erythema.	Severe	+	+	?	?.....	Postmortem.
21	Mann and Clegg.	3d.....	+	..	8	Soon.....	Malaise and back pain.	+	8	0	..	Jaundice..	Mild	0	0	?	?	
		4th.....	+	..	8	Soon.....	Malaise and back pain.	+	8	0	..	Anemia, jaundice.	Moderate .	0	0	?	?	
		5th.....	+	..	12	10 hours.	Vomiting, epigastric pain.	+	?	0	..	Some jaundice.	Mild	?	0	?	?	
22	Gulivitsch.1898	Foundryman	?	?	?	1 hour...	?	+		0	+	?	?	?	?	?	?	?
23	Müller.....	Tin worker..	+	..	?	?	?	....	?	..	..	?	?	?	?	?	?	
24	Barker.....	Laborer.....	+	..	?	?	?	....	?	..	..	?	?	?	?	?	?	
25	?.....	Chemist.....	..	+	?	?	?	....	?	..	..	?	?	?	?	?	?	
	Author...1906	Metallurgist	+	..	35	2 hours..	Malaise, chills, abdom. pain.	+	6	0	+	Jaundice to bronze.	Moderate .	0	0	Slight, 3 da.	Rapid, soft.	
		Helper	+	..	4	Within 24 hours.	Slight malaise.	+	4	0	0	Jaundice..	Mild	0	0	0	Normal.	
		Assayer.....	+	..	42	4½ hrs.	Cold, nausea, lumbar pain.	+	7	0	+	Bronze, greenish.	Moderate .	0	0	38.8 3 da.	Rapid.	
		Helper	..	+	9	5 hours..	.....	+	9	..	0	Brown.....	Severe.....	0	0	?	Rapid, soft.	
		Helper	..	+	60	At work..	Cold, vomiting, abdominal and lumbar pain.	+	60 hours.	+	0	Bronze to copper color.	Severe.....	0	0	Slight.	Rapid, soft.	Postmortem.

* Small amount. † Scanty. ‡ Reference only (Index Medicus.)

tive; edema of the dependent portions has been noted. In patients who have lived some days before death has occurred a moderate degree of fatty change of the myocardium has been described, but never are there the high grade fatty changes of the parenchymatous organs that are seen in phosphorus poisoning, for instance. There is a notable absence of fatty degeneration. The kidneys are usually somewhat enlarged, dark colored, very bloody and the seat of a high grade hemorrhagic nephritis. The tubules are filled with detritic casts, the blood vessels with broken-down red blood cells. The glomeruli are least involved. Round-cell infiltration is not much seen, for the reason that the process is so intense and so little time elapses that reactive measures have not time to take place. The liver is large, dark colored and bloody; the cells contain much pigment and but little fat. The biliary radicles contain pigment. The gall bladder is distended in all reported cases with a thick, tarry bile, and the bile ducts are open. The spleen shows acute tumor, the stomach and intestines have nothing characteristic, except the large amount of bile in the contents of the latter. All serous membranes are more or less stained. Traces of arsenic have been obtained from the urine, kidney, liver, bile and blood by different investigators. Iron-containing pigment is rather generally found throughout the body as shown by cyanid preparations.

SYMPTOMATOLOGY.

Three symptoms stand out as fairly characteristic of this type of arsenic poisoning: Pain in the region of the kidneys, jaundice and hemoglobinuria. The long period between the inhalation of the poison and the onset of the symptoms is the opposite of that of other arsenical salts. Although this period varies within limits, it is seldom less than one hour and usually is several. The shortness of the period depends to a large extent, though this also varies, on the amount of arsenic inhaled. Becker's patient experienced symptoms within one-half hour and terminated fatally in three days. Still, in this case the patient had been at work in the same laboratory room the entire afternoon and could easily have been poisoned several hours before the time noted. In all cases of moderate or great severity the onset is fairly sudden with the feeling of coldness or with chills, rapidly oncoming prostration, dizziness, headache, numbness of the extremities and pain. Nausea, in some cases vomiting, is found, associated usually with the pain and, in a measure, proportionate to its severity. The vomitus is first the normal stomach contents, later it is mixed with more or less bile. In one case of Vallette's a quantity of black blood was vomited once.

The pain is usually severe, sharp and paroxysmal, though the patient is seldom entirely free from pain, and in the majority of cases it is located in the lumbar region of the back and radiates into the loins. Others have experienced diffuse abdominal pain or an epigastric pain, associated with the lumbar distress. In only the first of this series of five cases was all pain localized in the abdomen, and none experienced in the region of the kidney. In very mild cases there may be no pain. In the non-fatal cases actual pain ceases, in a few days, usually with the establishment of free diuresis. In those terminating fatally it continues until relieved by unconsciousness, which precedes death.

Hemoglobinuria is a constant symptom in all cases. It begins within a few hours of the onset, lasts a variable length of time measured by days, and terminates either favorably by a gradual return to the normal or fatally by complete urinary suppression. In many of the non-fatal cases a distinct diuresis is noted independent of treatment. In two of our cases this was present. In the least severe case there was nothing noted except the hemoglobinuria and the light grade of jaundice. The urine varies from dark red to brownish black in color, contains sufficient albumin to completely coagulate it by heat, and shows large quantities of methemoglobin, oxyhemoglobin and some bile pigments (Geigy). The sediment is variable. It may be very small in amount and contain only a few epithelial cells and no whole or disintegrated blood elements in the mild cases. The sediment of the severer cases may be very rich, consisting of large quantities of disintegrated red cells (Wächter, Dütting, author), a variable number of washed-out, pale-appearing, but otherwise uninjured, erythrocytes (author), and granular, epithelial and blood casts (Wächter, Geigy), though for the most part the urinary condition is almost a pure methemoglobinuria. Traces of arsenic were found in the urine by Wächter and myself. In one case, that of Müller (1837), there was a generalized subcutaneous emphysema of uncertain origin; in all other reported cases jaundice was present. This begins soon after the onset of the symptoms. In our mild case it remained a distinct, yellowish jaundice. In those of any severity the skin soon turns a darker color, becoming brownish, coppery, sometimes greenish. The discoloration lasts usually some weeks, gradually fading when the coincident anemia becomes evident.

Nervous symptoms are present in all severe cases. In none of our cases were they severe. Stupor, semi-unconsciousness, later unconsciousness were present in our fatal cases. In Case 2 the patient at first had cramps in the legs; later he was very restless even when free from pain. There were no evidences of uremic twitchings or convulsions as reported by Coester and Becker. Exaggerated deep reflexes were not present in our cases nor reported so in others. Severe headache has been noted by some, though, as a rule, it is not so much complained of as the lumbar pain. Disturbances of vision, hearing and sensation have not been found.

The vascular system presents the picture of a severe blood dissolution. The anemia is grave. It consists seemingly of a solution of the hemoglobin content from the red cell more than a disintegration of the cell itself, although there is also a widespread destruction of the erythrocytes. The hemoglobin by Fleischl or Gowers may be relatively high. Rouleaux formation is retarded or prevented. There is no leucocytosis. Geigy reports in his first case the following blood findings: Reds, 885,000 to 920,000; hemoglobin (Gower), 57 per cent.; presence of disintegrated red cells and the shadows of non-disintegrated cells. No rouleaux formation. In his second case there were: Reds, 2,920,000; hemoglobin, 62 per cent.; small tendency to rouleaux formation, few disintegrated cells and few shadows of cells. Becker, in his case, found by smears large numbers of unstained shadows of red blood cells, much detritus and few white cells. This was the condition in two of our cases as noted in smears made by Dr. Hosmer. Diffuse bleeding is less common than might be expected from the condition of the blood and urine. Müller described large and small petechial spots on the extremities of his patient. Vallette described, in his second case, which resulted fatally, severe hemorrhages from the nose, gums, tonsils, bowels and genitalia. Blood in the stool

has been noted a number of times. But these conditions are the exception.

Moderate dyspnea on exertion is commonly described. Distinct air hunger in all of our cases was noticeably absent in spite of the severe blood destruction. It is mentioned, however, by Becker and Geigy. The stools are usually loose. Diarrhea may occur, but devoid of signs of inflammation as with other arsenic compounds. The stools are dark colored from the large amount of bile contained. Without doubt death is due largely to acute urinary suppression. Some patients, as stated above, have shown distinct uremic signs; the majority, however, have not. Of the 20 fatal cases here recorded, the most rapid death was that of Trost's fourth patient, who died in two days. Our second patient died in 60 hours from the time of exposure. Vallette's patient lived for thirty days before dying, which is the longest period of time noted. The average for 19 cases, in which the duration of the illness is stated, is 8.2 days. Of the 60 patients whose cases are recorded, 40 recovered; of these, the length of convalescence, that is, the length of time in hospital or kept from work, is given for 25. The longest is seven weeks, reported by Schindler; the shortest, four days, one case reported by Eitner and one by me. The average duration of illness was 17.3 days. In all of my cases a severe anemia lasted for some time after all other signs of illness had disappeared. Ultimate recovery without complications or sequelæ was the result in all cases.

TREATMENT.

Aside from measures taken to prevent the escape or formation of arseniureted hydrogen gas in laboratories or in the arts, the treatment in such cases is purely symptomatic. Three indications are present, along the lines of which much can be accomplished for the patient. First, the need of abundant fresh air. Oxygen should be of much benefit and should be used continuously. Secondly, the establishment of free diuresis to prevent the blocking of the uriniferous tubules by disintegrated blood cells and tubule epithelium. Toward this end all bland diuretics can be used, especially large quantities of water and milk, and often repeated saline enemas and warm baths. General supportive treatment, as in all prostration cases, is, of course, always needed. The use of digitalis need not be avoided for fear of a fatty myocarditis, because the latter, to any extent, does not exist. As a rule, the patient with suppressed urine will die. Active diuresis is a very favorable sign, and the majority of patients with polyuria will recover. The long-standing anemia is much benefited by iron.

THE EFFECT OF ARSENIURETED HYDROGEN GAS.

Among the earlier writers on this type of arsenical poisoning, Eulenberg[26] (1865) stated that after aspiration of the gas it was no longer to be demonstrated in the blood. Hermann[27] (1874) determined that arseniureted hydrogen was oxidized by the oxygen contents of the hemoglobin to arsenous acid, and from this fact he believed the poisonous properties of the gas due to its property of breaking up oxyhemoglobin. That arseniureted hydrogen is oxidized to arsenous acid by the blood and also by the liver tissue was later verified by Stricker[28] (1882). The reduction of oxyhemoglobin with the following destruction of the red blood cells was first noted by Bogomaloff[29] (1868) and Rabuteau[30] (1873). These observations were of importance because of their bearing on the previous discovery of Virchow[31] (1847), that all extravasated blood increased the formation of biliary pigments, and also the relation the action of the gas bore to other intoxications, infectious diseases, etc., which were accompanied by icterus without an apparent stasis of the bile outflow. That is, the icterus accompanying this form of poisoning belonged to the old group of hematogenous as opposed to hepatogenous icterus or icterus of pure stasis. Because of this relationship to the pathogenesis of icterus more is known of the specific effect of arseniureted hydrogen than otherwise would have been. In 1868 B. Naunyn[32] conducted the first animal experiments with the gas and found the specific changes in the blood and hemorrhagic infarcts of the kidneys. His work led him to believe more strongly in the view then existing that bile salts were formed in the circulating blood as well as in the liver. The later reports of poison cases by Vallette, Ollivier, Trost, Wächter and Eitner added much encouragement to this belief. Shortly afterwards Stadelmann[33] began a series of animal experiments with toluylendiamin and arseniureted hydrogen to prove a common basis for both types of icterus. In many sections on dogs he found the gall bladders uniformly distended, the bile thick, tarry and tenacious and histologically the biliary radicles in the liver engorged with bile pigment and crystals. At the same time he noticed that the more severe the icterus the less bile there was in the intestine. It was clear to him, therefore, that stasis was obtained by the consistency of the bile itself, and that the icterus was as dependent on mechanical causes as any obstructive jaundice. The primary cause lay in the destruction of the blood, but the real cause was an overproduction of bile which clogged the biliary passages and allowed resorption into the lymph and blood spaces to occur. He termed this condition icterus from polycholia, or pleiochromia.

Minkowsky and Naunyn,[34] a little later, undertook a series of experiments with geese and ducks, because the anatomic relations between the portal vein and renal veins is such that the liver can be removed from the general circulation. Normal geese and ducks showed, after a short inhalation of arseniureted hydrogen gas, hemoglobinuria and a distinct increase of bile pigment excretion. Fowls from which the livers had been removed showed a hemoglobinuria, but no bileverdin in the urine. These experiments were seemingly conclusive that the formation of bile salts could not occur without the presence of the liver. Histologically they noted large cells containing fragments of red blood cells and clumps of hemoglobin scattered mainly through those organs, as the liver, spleen and bone marrow, where the blood current was slowest, which gave an iron reaction when treated with ferrocyanid of potassium and hydrochloric acid. Moderately rapidly this bile pigment became reduced and entirely disappeared. The probable formation is that of hemotoporphyrin from the free hematin, the former passing to the liver, where it is converted into biliary salts. These cells containing fragments of erythrocytes found in the liver capillaries were also noticed to stain green when treated with a 5 per cent. corrosive sublimate solution. The cells in the other portions of the body did not do this, and this fact was considered by both authors to mean an actual transformation into biliverdin as taking place in these cells found within the liver. They also assume that the hemoglobin dissolved from the cells and remaining free in the serum is transformed into bile salts by the liver cells. Ponfick[35] has asserted that the normally func-

tionating liver will take care of one-sixtieth part of the total hemoglobin content. Whenever destruction of the red cells liberates an amount which exceeds this quantity icterus will result. Clinically at least, it would seem that this condition does not hold true and that something besides a destruction of blood is needed to explain an icterus, especially when associated with little or no ascertainable anemia. Many have held that a second factor is necessary, a functionating disturbance of the liver cells themselves, such as is assumed in case of the kidney cell which permits an albuminuria. It is easy to assume the possibility of disturbed function on the part of the liver cells from the effect of so intense a toxic agent as arseniureted hydrogen.

The more recent work of Eppinger,[36] which is based on careful histologic preparations that have allowed the walls of the bile capillaries to be plainly seen and have demonstrated imperfect lymph spaces between the bile capillaries and the cells, has again added more weight to the purely mechanical theory of icterus. He describes in these types of jaundice obstruction of the capillaries, often a sinuosity, varicosity, at times a rupture of the walls, and as a result the bile escapes into the lymph spaces and thence into the blood. This obstruction of the capillaries is often of the nature of distinct casts or thrombi and does not concern the bile passages. In the main this work has been confirmed by Minkowsky and Winckelmann,[37] although they do not find these lesions in all forms of jaundice examined, especially of infectious jaundice. In these cases the former believes a specific action of the cell the primary cause, so that he still groups icterus into two large classes—the true obstructive type in which mechanical obstruction is the underlying cause, and the toxic, cyanotic and nervous type, in which a disturbed cell function is the determining factor.

In brief résumé, arseniureted hydrogen is an exceedingly toxic compound of arsenic which acts on the animal body in a way distinct from that of other arsenic salts. The principal organs attacked are the blood and the kidneys. The lesions of the former consist of a rapid dissolution of the hemoglobin content and an actual disintegration of the red cells. The effect on the latter, as seen postmortem, is an intense, diffuse, hemorrhagic, degenerative process, involving the convoluted tubules most severely and the glomeruli least and showing but slight reaction toward regeneration. The jaundice which is present in all cases is probably of an obstructive type in the main, though it is highly probable that disturbed liver cell function also plays a certain rôle in its formation.

I wish to thank Dr. Castleman and Dr. Hosmer for the use of the cases and their clinical reports, and also Professor Hektoen in whose laboratory this work was done.

BIBLIOGRAPHY.

[Nos. 1-25 correspond to the cases in the table.]

1. Reported by E. Geigy: Beitrag zur Kenntniss der Arsenwasserstoff-Vergiftung des Menschen., Inaug. Diss. 1890, Basel.
2. Reported by H. Eulenberg: Die Lehre von den schädlichen Gasen. 1865.
3. Taylor: Die Gifte, etc., 1863, ii, p. 336.
4. O'Reilly: Case of Accidental Poisoning, etc., Dublin Jour. of Med. Sci., 1841, xx.
5. Mouat: Poisoning by, etc., Edin. Med. Jour., 1857, vol. iii.
6. Vogel and Neubauer: Anleitung z. qualit. u. quant. anal. des Harns. 1872.
7. Ollivier: Soc. de Biol., Compt. rendus, Paris, 1863.
8. Chevallier: Jour. de Chem. Med., 1864, vol. iv.
9. Vallette: Gaz. Med., Lyon, 1870.
10. Ollivier: Soc. de Biol., Compt. rendus, 1873.
11. Trost: Vergiftung durch, etc., Vierteljahrssch. f. gerichtl. Med., 1873, xviii.
12. Wächter: Casuistik, etc., Eulenberg's Vierteljahrssch. f. gerichtl. Med., 1878, xxviii, p. 251.
13. Dütting: Ueber einige Fälle von, etc., Inaug. Diss., Neiharg i, Br., 1888.
14. Eitner: Berlin. klin. Wochschr., 1880, xiii. 256.
15. Coester: Berlin. klin. Wochschr., 1884, xxi.
16. Sury-Bienz.: Eulenberg's Vierteljahrsschr. f. gerichtl. Med., 1888, lv, 353.
17. Becker: Casuistik der, etc., Inaug. Diss., 1888, Giessen.
18. Geigy: Inaug. Diss., 1890, Basel.
19. Schickert: Fall v. etc., Münch. Med. Wochschr., 1891, vol. xxxviii, p. 28.
20. Martin: Case of, etc., Med. Chron., 1893-1894, xix.
21. Mann and Clegg: Toxic Action of, etc., Med. Chron. Manchester, 1895-1896, n. s., iii, 161-171.
22. Gulivitsch: Ein Fall v., etc., Ztschr. f. physiol. Chem., Strassburg, 1898, xxiv, 511.
23. Barker: St. Louis M. and S. J., 1864, U. S., i, 29-31.
24, 25 and 23. Mentioned by Whitthaus and Becker: Med. Juris., Foren. Med. and Toxicol., iv, 330-339.
26. Eulenberg: Schädliche u. giftige Gase. Brannschweig, 1865, 410.
27. Hermann: Lehrbuch d. experimen. Toxikol., 1874, 138.
28. Stricker: Exper. Untersuch. über, etc., Inaug. Diss., Bonn, 1882.
29-30. Bogomaloff. Rabuteau, quoted by Stricker.
31. Virchow: Archiv. v. Reinhard u. Virchow, 1847, i.
32. Naunyn (B.): Reichert u. Dubois, Archiv., 1868.
33. Stadelmann: Archiv f. experimen. Path. u. Phar., 1883, xv; 1882, xiv, and 1887, xxiii.
34. Minkowsky and Naunyn: Ibid., 1886, xxi.
35. Ponfick: Verhandl. d. Cong. f. innere Med., second Congress, Wiesbaden, 1883, 210.
36. Eppinger: Weitere Beiträge z. Pathogen. des Ikterus. Ziegler's Beiträge, 1903, xxxiii, 123.
37. Minkowsky and Winckelmann: Zeitschr. f. klin. Med., iv.

Clinical Notes

INSPECTION OF THE JUGULAR VEIN; ITS VALUE AND ITS LIMITATIONS IN FUNCTIONAL DIAGNOSIS.

A CRITICISM BY DR. HIRSCHFELDER AND A REPLY BY DR. MCCASKEY.

I. A CRITICISM.

ARTHUR D. HIRSCHFELDER, M.D.
Instructor in Medicine, Johns Hopkins University.
BALTIMORE.

The subject of heart-block and the recent additons to the knowledge of the allied functional disturbances of the heart and of the so-called cardiac neuroses have aroused a great deal of interest in the revelations from tracings of the venous pulse and polygraphic tracings. Although with appropriate apparatus[1] these are somewhat less difficult to obtain than are good radial pulse tracings, some form of rather expensive polygraph is necessary, and about half an hour is required to obtain the desired record.[2] Nevertheless so much information is to be gained by what they show that this procedure can scarcely be omitted from the modern routine examination of heart cases.

It is, therefore, natural that efforts should be made to minimize the labor involved in such investigation, and in this regard the recent contribution of Dr. G. W. McCaskey[3] marks an attempt toward simplicity. By means of the Mackenzie receivers[4] placed on the jugular vein and apex and attached to tambours bearing levers in the usual manner the pulsations from these areas are transmitted to the levers, which are brought as close as possible to each other; and from the respective movements the events of the cardiac cycle are deciphered. He does not state what advantage this visual method has over simply watching the pulsation of the jugular vein while feeling the pulse in the carotid with the finger.

1. Hirschfelder (Arthur D.): Graphic Methods in the Study of the Cardiac Diseases, American Jour. Med. Sci., 1906, cxxxii, 378.
2. With my polygraph, a modified form of the Erlanger blood pressure apparatus, a set of records may occasionally be obtained in less than ten minutes, but usually more time is required.
3. An Ocular Method for the Diagnosis of Heart-Block, JOURNAL A. M. A., 1907, xlviii, 418.
4. Mackenzie (James): The Study of the Pulse (London) Macmillan, 1903.

The latter method is often most satisfactory and should be absolutely so for the diagnosis of complete heart-block when there are four or more beats of the auricle to one of the ventricle; in fact, by that means the first diagnoses of heart-block were made.

In the numerous tracings from the jugular veins which I have made at the Johns Hopkins Hospital during the past two years I have been struck by the fact that it is much easier to see these pulsations than to transmit them to the tambour lever, so that no small fraction of the time for obtaining good permanent records is required in this method. I have frequently watched the movements of the levers, as now suggested by Dr. McCaskey, in order to see whether one could judge of these movements by the eye with any degree of accuracy. When controlled by tracings taken immediately afterward it became evident not only to myself but to other members of the staff, that it was quite impossible to judge of the exact sequence of lever movements occurring within 1/5 sec. of each other. It is true that successive beats of the auricle do not occur within this interval; but, as may be seen from

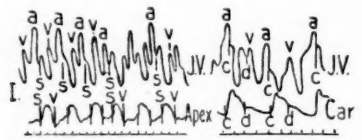


Fig. 1.—Physiologic venous pulse, with normal waves somewhat exaggerated, owing to much-distended veins; divided into 1/5 second spaces: a = presystolic wave on jugular pulse; s = onset of ventricular systole; c = onset of wave in carotid pulse; v = crest of postsystolic wave (instant of opening of tricuspid valve); j. v. = jugular vein; car. = carotid.

the appended (normal) jugular tracing (Fig. 1), secondary waves (v) do take place, whose time of occurrence must be most accurately estimated before these cases can be differentiated from cases of partial heart-block. Unfortunately, this can be accomplished only by the somewhat troublesome method of mensuration on graphic records. In support of this statement may be cited the experience in the medical clinic of the Johns Hopkins Hospital during the current year where a constant effort has been made to diagnose functional disturbances of the heart by inspection of the venous pulse and then to control these by graphic records.[5]

The criteria applied were as follows: The observer beat time with his finger to the regular beats of the carotid pulse to accustom himself to the rhythm. (Graphic records made

Fig. 2.—Auricular extrasystoles at E. Lettering as in Fig. 1.

to control this method of marking show that while it is sometimes absolutely accurate there are often discrepancies amounting to 1/5 sec.) If at the instant when a ventricular systole was expected no beat occurred in the carotid and no first sound or only an extremely distant (auricular) one and this was accompanied by an extra wave in the jugular while the next beat fell in at the regular time, it was fair to assume that the ventricular had failed to follow one auricular contraction. If, on the other hand, the first sound occurred before it was due, one was justified in assuming that an extra systole had occurred. When several faint and distant sounds (not murmurs) are heard in diastole accompanied by waves in the jugular but unaccompanied by either a pulsation in the carotid or an apex impulse a high degree of heart-block is quite certainly present.

Extrasystoles taking their origin in the auricles can often, but by no means always, be differentiated from those arising in the ventricles in the following way:

Auricular extrasystoles, like the regular systoles, show a presystolic filling of the vein followed by a systolic collapse, then a second filling and, lastly, a postsystolic collapse (two fillings and two collapses) for each beat in the carotid; ventricular extrasystoles often show only one large flapping rise and fall about synchronous with the carotid pulse, the appearance being quite different from the usual jugular wave and quite characteristic. Graphic records illustrating these two forms of venous papule are shown in Figures 2 and 3. Another point, also not infallible, is that the time occupied by the regular systole, the *auricular* extrasystole, and the pause before the next regular beat is often less than two regular cardiac cycles. So that if in these cases one beats the time of the regular rhythm not only does the extrasystole come before the regular beat would have occurred, but the subsequent beat occurs before the second regular beat would have taken place had there been no extrasystole. The entire rhythm appears for the moment altered. When there is a *ventricular* extrasystole[6] (also with late *auricular* extrasystoles[7]) the duration of systole, extrasystole, and subsequent pause is exactly equal to two regular

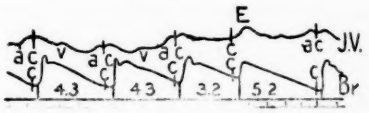


Fig. 3.—Ventricular extrasystole at E. Lettering as in Fig. 1.

cardiac cycles; and when one beats time to the regular rhythm it is observed that the extrasystole occurs before a regular beat would have come, while the next regular beat falls in at exactly the instant at which it would have fallen if no extrasystole had been present, and the rhythm is not otherwise disturbed.

This distinction between the different kinds of extrasystoles is of some practical clinical importance, as it has been found that the irregularities due to ventricular extrasystoles often disappear under digitalis,[8] while digitalis often converts a case with auricular extrasystoles into one of partial heart-block, and does distinct harm to the patient.[9,10,11] Some experiments made in collaboration with Dr. Eyster[7] indicate that conduction from auricle to ventricle is diminished with early extrasystoles, but not with those occurring late in diastole. It is only with the former that the above-mentioned marked disturbance of rhythm takes place, so that it is probable that digitalis may be given judiciously and safely in all cases of irregularity due to extrasystoles in which systole, extrasystole and subsequent pause occupy the time of two full cardiac cycles.

The disturbance of rhythm due to intermittent overaction of

5. It is not my desire to intimate that these methods in any way supplant the graphic methods. They are of use only in the absolutely typical cases; and whenever the results of the observations are not perfectly sharp and unambiguous they are of no value. In a large proportion of cases, however, the findings are typical, and the clinician can save himself a troublesome examination. If he does resort to instruments he at once encounters difficulties, the principal of which is the difficulty in adjusting the receiving tambour to the jugular so as to obtain the correct movement of the lever. Dr. McCaskey's method suffers from this disadvantage in exactly the same degree as any of the ordinary graphic methods, and yet lacks the advantage of giving a tracing which shows everything accurately. In any case, either to be published or in which the simple inspection method does not lead to a perfectly unambiguous observation, nothing less accurate than the graphic method yields trustworthy results. With my modification of the Erlanger blood-pressure apparatus a tracing may be taken even more easily than a visual observation made by the method of Dr. McCaskey.

6. Cushny (A. R.) and Matthews (S. A.: Effects of Electrical Stimulation of the Mammalian Heart, Jour. Physiol, (Cambridge), 1897, xxi, 214.

7. Hirschfelder (Arthur D.) and Eyster (J. A. E.): Extrasystoles in the Mammalian Heart (about to appear in the American Jour. Physiol.).

8. Hering (H. E.): Ueber continuierliche Herzbigeminie, Deutsch. Arch. f. klin. Med. (Leipzig), 1904, lxxix, 175.

9. Mackenzie (James): New Methods of Studying the Heart, Brit. Med. Jour. (London), 1905, i, 519, 587, 702, 759, 812.

10. v. Tabora (D.): Ueber die experimentelle Erzeugung von Kammersystolenausfall und Dissociation durch Digitalis, Ztschr. f. exper. Path. und Therap., 1906, iii, 499.

11. Hewlett (A. W.): Digitalis Heart-Block, Jour. A. M. A., 1907, xlviii, 47.

the vagus (Mackenzie's "youthful type"[9]) may sometimes be differentiated from that due to auricular extrasystoles by the fact that, though there is a pause bearing no relation to the rhythm of the heart, this pause is not preceded by a premature beat or sound.

We have also attempted to differentiate from inspection between the normal venous pulse and that of tricuspid insufficiency. It is often impossible to determine with the eye whether a filling of the vein occurs during systole of the ventricle or just before it, so an attempt was made to adopt a criterion which it has since been learned has been sometimes found useful by Dr. G. A. Gibson of Edinburgh. The normal jugular pulsation shows, as stated above, two fillings of the vein and two collapses for each beat in the carotid. The typical pulsation in tricuspid insufficiency consists of a single filling of the vein and a single collapse for each carotid cycle; so that it has become customary in the wards to speak of them as the "double" and "single" types of venous pulse. In most cases this criterion suffices for the diagnosis of tricuspid insufficiency (subsequently borne out by the physical findings and autopsy), but there are some notable exceptions to this rule.

1. In cases where secondary elevations appeared in the venous pulse during the systolic phase, tricuspid insufficiency being present. 2. In those normal cases where, owing to the small amount of collapse occurring during the systolic period, only one venous wave could be seen with each carotid cycle.

These ambiguities were always readily cleared up by careful measurement of the tracings obtained. The clinical observations were, moreover, corroborated by other members of the medical staff.[12]

Hence it would appear that, although inspection of the venous pulse may frequently yield valuable information as to the disturbance of cardiac function, it is subject to grave errors, not less serious than those incurred by omitting the use of apparatus in determining blood pressure or of the thermometer for temperature. Heart-block, partial or complete, is a condition of too somber significance to justify physicians in failing to control their observations from inspection by the use of more accurate methods—the venous pulse tracing.[13]

VISUAL METHODS IN DIAGNOSIS OF HEART-BLOCK.

II. A REPLY.

G. W. McCASKEY, A.M., M.D.

Professor of Medicine and Clinical Medicine, Medical Department of Purdue University; Physician to Hope Hospital.

FORT WAYNE, IND.

In availing myself of the opportunity of making a rejoinder to Dr. Hirschfelder's criticism of my recent communication I wish first to say that I think his criticism is partly right and partly wrong. The diagnosis of complete heart-block with the auricle beating four or five times as fast as the ventricle can undoubtedly, as he says, be made without instruments of any kind. In partial heart-block, however, which probably always precedes the complete form, the problem is entirely different. We may not have bradycardia in these cases, but only an irregularity caused by an occasional "block" of the auricular impulse. These cases, the recognition of which is so important, can scarcely be detected without the aid of suitable instruments. It might, of course, be possible in favorable cases to *feel* an omission of the radial pulse or apex beat and *see* that a conspicuous venous pulsation continued without interruption. This could only be due to a "block" of that particular auricular impulse, and would point to incipient heart-block.

With a trained and capable physiologic investigator like Dr. Hirschfelder such observations might be quite reliable, but the dangerous fallacy which underlies the routine clinical attempt to determine the time relations of cardiovascular events by inspection and palpation is forcibly illustrated by the history of the now exploded theory of the delay of the radial pulse in aortic regurgitation. Such men as Flint, Balfour and Broadbent taught the correctness of this theory, Balfour stating[4] that "this delay in aortic reflex is invariable." Graphic tracings made in many cases of aortic regurgitation by Mackenzie have shown that there is not the slightest delay beyond the usual physiologic period, and his observations were corroborated, or anticipated rather, without his knowledge by Francois-Franck and Keyt. It undoubtedly does not occur.

When the left ventricle contracts in cases of aortic regurgitation there is a continuous column of blood from the distended ventricle to the radial artery in a closed tube of normal size, and the column must move without delay and the radial pulse be produced, as we now know it to be, at once; and yet Balfour, an able acute clinician, said that the delay might be "so great that the radial pulse coincides with the ventricular systole immediately succeeding that which has produced it." What a comment this bit of history is on the correct interpretation of such events by the unaided senses! I do not wish to underestimate the value of the highly trained eye, ear and finger, and I think that one of the greatest benefits of the graphic methods will be to enable the clinician to educate those senses in a school of precision heretofore unattainable. He will learn by unimpeachable demonstration just what certain sensations mean, and will be able to interpret them as never before. So I would urge inspection and palpation in the study of cardiac disease with greater ardor than ever, checked and guided by the graphic methods.

What are the advantages offered by this "visual method over simply watching the pulsation of the jugular vein while feeling the pulse in the carotid with the finger"? The facts above cited concerning the retardation of the pulse in aortic regurgitation show how misleading the direct observation of these phenomena may be. It seems to me that a comparison of two parallel levers, especially designed for inspection, simplifies the matter very much. They present a broad surface instead of the narrow-pointed ends of the writing lever. They are much longer than the writing levers on Dr. Hirschfelder's modification of Erlanger's sphygmomanometer which he has been observing with the same end in view, and, therefore, have much greater amplitude of motion. That the observation and comparison of such levers can be more easily and more accurately made than observation of the venous and palpation of the carotid pulses seems to me clear; but whether these advantages are sufficient to justify the multiplication of instruments already burdensomely numerous may easily be questioned. If it could be regarded as a finality in the instrumental study of auriculo-ventricular relations it would be different; but, as clearly stated in my former communication, such is not the case. For instance, a lengthening of the a-c interval (i. e., the interval between the auricular systole and the carotid pulse) is important, even in the absence of any irregularity of the ventricle, as showing a probable impairment of the conductivity of the bundle of His. This could be recognized in exceptional cases if well marked by watching the motions of the levers from the venous pulse and the apex beat, when the

12. Preble: (Insufficiency of the Tricuspid Valve in the Course of Pernicious Anemia, American Jour. of Med. Sci., 1906, cxxxii 393) reports the finding of tricuspid insufficiency in cases of marked anemia, as had also v. Leube. Neither of these writers supported their findings by tracings from the veins, nor mention having made any. Many years before this Potain (La Clinique médicale de la Charité, 1894) had shown by tracings that no real tricuspid insufficiency was present in this group of cases. This observation of Potain is also confirmed by the recent and very careful work of H. E. Hering (Deutsch. med. Wochschr., 1906, 1). In those cases of marked and of pernicious anemia which have come under my observation no tricuspid insufficiency has been present. In one case the venous pulse was of the "single" type, but tracing showed that the collapse occurred during systole of the ventricle. In face of this evidence the observations of Preble and Leube require confirmation.

13. As I have stated elsewhere (see footnote 1 and also Observations on Paroxysmal Tachycardia, Bull., Johns Hopkins Hosp., 1906, xvii, 337) two kinds of partial heart-block are to be distinguished: the organic heart-block, due to lesion in the course of the His' atrio-ventricular bundle; and the failure of ventricle to follow all the impulses from the auricle, due to overaction of the vagus. The former type is always to be regarded as a forerunner of complete block (cf. Erlanger and Hirschfelder: Further Studies on the Physiology of Heart-Block in Mammals, Amer. Jour. Physiol., 1906, xv, 153). The second type can be differentiated from the first only by means of atropin, or some other drug which paralyzes the vagus.

latter can be utilized, which is not rarely impossible. It would, however, be uncertain and unreliable, while with simultaneous tracings the precise interval can be measured with perfect accuracy. I use the Mackenzie polygraph in practically every case, and consider the graphic tracings so essential to accurate diagnosis that I would deeply regret if any one should on my recommendation forego these for a method which, while it has a value, is limited in its application and falls short of the requirements of scientific accuracy. It was only intended to serve as a means of prolonged observation of arterial and venous pulsation, and, especially when the apex beat can be utilized, of making a preliminary diagnosis of heart-block, which should, of course, be verified and studied in detail by graphic tracings.

The diagnosis of heart-block, even of the partial form, should not, as Dr. Hirschfelder remarks, be made without verification by simultaneous tracings of the venous and arterial pulse. It should be borne in mind, however, that partial heart-block can be produced by other lesions than degeneration of the conducting bundle of His—conditions from which complete recovery is entirely possible so that the "somberness" of the diagnosis of partial heart-block depends on its pathology. The ventricle, because of nutritional or other changes, may have its irritability so depressed that it will not regularly respond to a normal auricular impulse transmitted through a perfectly normal set of conducting fibers; or, on the other hand, an impaired tonicity of the auricle may very probably initiate an impulse so weak as to be occasionally ineffective.

We clinicians are more than grateful for the criticisms and scientific methods of the physiologists, for they have made possible the tremendous strides which have been made within the last decade in cardiac pathology and therapeutics.

A CASE OF DOUBLE PLEURISY WITH EFFUSION.

J. F. McGARRAHAN, M.D.
COHOES, N. Y.

Cases of double pleurisy with effusion are seemingly rare enough to warrant the following report:

Patient.—M. W., aged 11½, was first seen June 18, 1903.

Family History.—On the father's side this was negative. There had been several cases of pulmonary tuberculosis among the mother's sisters, one of whom was ailing at the time this child was seen. A sister of the patient had pleurisy with effusion four years before, which required early aspiration and the girl made a good recovery. One brother died at 4 years of diphtheria.

Personal History.—The girl had typhoid fever at the age of 8. Six months before the present attack she developed a rash resembling scarlet fever, which disappeared in 24 hours. The child was not very sick at the time. Ten days before I was called she came home from school with fever, headache, vomiting and nosebleed. A harsh dry cough quickly developed, which was associated with some pain through the chest and much distress. The fever continued and breathing became much embarrassed. The cough was distressing and bothered her greatly; she was unable to lie in any one position except for a short time, and had to be propped in a chair day and night. There was repeated epistaxis and much prostration.

Examination.—When first seen dyspnea was very marked, respiration was 60, temperature 102.6 F., and pulse 160. The child was cyanosed. Inspection revealed limited motion of the lower chest. There was dulness on percussion, merging into flatness, beginning at the angle of the scapula on the right side, and 1½ inches above the angle on the left side, and to about the fourth rib anteriorly on both sides. Auscultation showed harsh breathing, bronchial in character, over both sides, above the area of dulness, and over this area there was fairly distinct transmission of the bronchial respiratory sounds. The heart showed little displacement and no organic lesion. The urine was negative.

Treatment.—The left chest was aspirated June 19, giving 19 ounces of light colored fluid and on the day following aspiration of the right chest gave a little over a pint of fluid of the same character. Much relief followed the removal of the fluid, and the usual medical treatment—counter-irritation, diuretics, an occasional saline cathartic and iodin in several of its forms—was used. The thickened pleuræ were rather slow in returning to normal, but under outdoor life, syrup of iodid of iron and cod liver oil, the child made a good recovery and was discharged as cured August 14. Since this time she seems healthy.

MALIGNANT TUMOR OF THE TESTICLE.

J. B. CUTTER, M.D.
Surgeon to the Santa Fe Coast Lines.
ALBUQUERQUE, N. M.

The recent report[1] on this subject calls to mind a similar case coming under my own observation.

Patient.—J., a brakeman, applied to me, in May, 1906, for relief of what he had been told was hydrocele.

Examination.—The left testicle was found to be enlarged to the size of a lemon; it was fairly firm and not painful. Operation was advised and submitted to and the left testicle was removed and found to be carcinomatous. Recovery was uneventful and the man soon returned to work. A bad prognosis was given.

Subsequent History.—In November, 1906, the man returned for treatment and placed himself under the care of another physician, having meantime left the employ of the railroad. I was called to see the patient in consultation and found in the left hypochondrium a more or less movable mass. This had been gradually increasing in size and had been variously diagnosed, having been called among other things, a floating kidney. The man was emaciated and typically cachectic. A fatal prognosis was given in keeping with the original findings. The man insisted on an operation, which was performed; he died about ten days later. A growth involving the abdominal viscera of the left side was found, and no attempt at removal was made. The involvement was of course metastatic and although no microscopic examination was made it was undoubtedly carcinomatous, as was the testicle.

TRIPLETS WITH ONE PLACENTA.

WALTER E. SCARBOROUGH, M.D.
SHELBYVILLE, ILL.

Parental History.—The father and mother are natives of Illinois; the father is 38 years of age and the mother 32. The mother had previously given birth to seven children, two of whom were twins.

History of Present Case.—I was called at 3 a. m., February 1. On making an examination I found the right foot presenting. The amniotic sac had not yet ruptured, so I punctured it and with the next pain the right foot descended into the vagina. Delivery was easy. After tying the cord I made an examination and found another sac presenting. In the course of 45 minutes I ruptured it and found a breech. The child was delivered, the cord tied, and another amniotic sac appeared; this I ruptured and, after 30 minutes another breech presented. This delivery was more difficult than the others.

Remarks.—A peculiar feature of the case was the fact that there were three distinct and separate amniotic sacs and only one placenta, which was delivered after the last child was born.

After the third day the mother was able to nurse all three children. The three—two boys and a girl—weighed together 20½ pounds.

1. Rolfe (W. A.): A Rare Form of Malignant Tumor of the Testicle, THE JOURNAL A. M. A., Feb. 9, 1907.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1031.*)

(A list of all accepted articles is published on one of the advertising pages of The Journal in the first issue of each month.)

VERA-DIASTASE ESSENCE.

A liquid containing 0.130 Gm. (2 grains) of vera-diastase in each 4 Cc. (1 fluidram) of a menstruum containing 14 per cent. of alcohol, 12.5 per cent. of glycerin, with small amounts of flavoring matters.

Actions and Uses.—See Vera-diastase.

Dosage.—4 Cc. (1 fluidram).

Prepared by Frederick Stearns & Co., Detroit, Mich.

VERA-DIASTASE TABLETS.

Tablets containing, each, 0.130 Gm. (2 grains) of vera-diastase, which see.

Prepared by Frederick Stearns & Co., Detroit, Mich.

CREOSOTE CARBONATE.

Creosote Carbonate is a mixture of carbonic acid esters, analogous to guaiacol carbonate, prepared from creosote.

It is prepared by passing a current of carbonyl chloride into a solution of creosote in sodium hydroxide, and purifying the oily product by washing with weak soda solution and with water.

It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92 per cent. of creosote. It is odorless and has a bland oily taste. It is insoluble in water, but soluble in alcohol, ether, chloroform, benzene and in fixed oils.

The addition of a few drops of ferric chloride solution to the alcoholic solution should not cause any change in color. On boiling with potassium hydroxide solution the odor of creosote is evolved.

It is incompatible with alkalies.

Actions and Uses.—Creosote Carbonate has the same action as creosote, but is claimed to be non-toxic and devoid of irritant properties. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic.

Dosage.—From 0.3 to 2.0 Gm. (5 to 30 grains) for children, to 1 to 4 Gm. (15 to 60 grains) for adults in milk, coffee, wine, cod-liver oil or emulsion. Externally it may be applied undiluted.

CREOSOTAL.

A name applied to Creosote Carbonate, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 501,235; U. S. trademark.

CREOSOTAL-HEYDEN.

A name applied to Creosote Carbonate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York). U. S. Patent No. 501,235. U. S. trademark.

DIONIN.

A name applied to Ethyl-morphine Hydrochloride, which see.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patents Nos. 102,654, 107,225, and 108,075. U. S. trademark.

DIACETYL-MORPHINE.

Diacetyl-morphine, $C_{17}H_{17}(C_2H_3O_2)_2NO = C_{21}H_{23}O_5N$, is a synthetic alkaloid obtained by the acetylization of morphine.

Diacetyl-morphine was first introduced under the name Heroin by the Farbenfabriken, vorm. Friedr. Bayer & Co. It may be obtained by heating morphine with acetylchloride, washing the product with water and dilute solution of sodium carbonate and crystallizing it from alcohol.

It is a white, odorless powder, having a bitter taste, an alkaline reaction and melting at 173° C. (343.4° F.). It is practically insoluble in water or ether, sparingly soluble in cold alcohol, but readily soluble in hot alcohol; it is soluble also in chloroform and in benzene. It forms salts with acids which are soluble in water. On prolonged warming with mineral acids it is saponified, splitting off acetic acid and reforming morphine.

A solution of 1 part diacetyl-morphine in 100,000 parts of water becomes distinctly turbid on addition of solution of iodine. Its color reactions are similar to those of morphine, with the following exceptions: It does not liberate iodine from iodic acid and does not at once produce a blue coloration with potassium ferricyanide and ferric chloride. No blue color is produced by the addition of ferric chloride to a neutral solution (1 in 100) made by the careful addition of dilute sulphuric acid. Its solutions reduce potassium permanganate.

Action, Uses and Dosage.—See Diacetyl-morphine Hydrochloride.

ETHYL-MORPHINE HYDROCHLORIDE.

CODETHYLINE HYDROCHLORIDE.

Ethyl-morphine hydrochloride, $C_{17}H_{17}NO(OH)(OC_2H_5)\,HCl + H_2O = (C_{19}H_{24}O_3ClN + H_2O)$, is the hydrochloride of the ethyl ester of morphine.

The product was first introduced by Merck & Co. under the trade name Dionin. It may be obtained by the action of ethyl iodide on morphine in the presence of alkali, the basic product being purified by crystallization from hot alcohol, dissolving the crystals in hydrochloric acid and crystallizing.

It is a white, microscopically crystalline powder, odorless and only slightly bitter. It is soluble in about 7 parts of water and in 2 parts of alcohol, insoluble in ether and in chloroform. It melts completely with decomposition at 125° C. (257° F.).

It gives the usual reactions for alkaloids. It is distinguished from morphine salts by its insolubility in excess of alkali, and by not producing an immediate blue color, but gradually developing a blue-green coloration, when its solution is added to dilute ferric chloride solution containing a fragment of potassium ferricyanide.

It is incompatible with alkalies and their carbonates and alkaloidal reagents, as potassio-mercuric iodide, tannic acid, picric acid, etc.

Actions and Uses.—It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is the conclusion of some good observers that it possesses no advantage over codeine. Applied to the eye, it causes a local vaso-dilation, leading to acute conjunctival edema.

Ethyl-morphine Hydrochloride is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping-cough, for insomnia and externally in the treatment of corneal affections, conjunctivitis, iritis, etc.

Dosage.—0.015 to 0.06 Gm. (¼ to 1 grain). Externally it is applied in 10 to 20 per cent. solutions.

(*To be continued.*)

Avoidable Blindness.—Hess states in the *Med. Klinik*, iii, 133, 1907, that he is confident that fully half of the 30,000 cases of blindness known in Germany were avoidable, not to mention the much larger number of cases of partial impairment of vision from avoidable causes. The avoidable accidents, such as from flying particles of matches, from stone throwing and the like form a long list, and he suggests that it might be interesting to compile statistics of the number of cases of loss of one or both eyes from quack practices. The strict vaccination regulations in Germany have reduced to less than 1 per thousand the cases of blindness from smallpox, but in Austria—where vaccination is not so rigorously enforced—from 20 to 30 per cent. of the inmates of the blind asylums owe their blindness to smallpox.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, MARCH 30, 1907.

SCIENTIFIC WORK IN THE PHILIPPINES.

The fifth annual report of the director of the Bureau of Science of the Philippine Islands, Dr. P. C. Freer, indicates considerable advance in scientific research in that country during the year. The bureau has been enlarged by the incorporation of the Bureau of Mines and this has occasioned considerable crowding and inconvenience from the use of rooms for purposes for which they were not intended. Difficulty has also been experienced in keeping the service of skilled investigators in the various departments, especially for positions which pay from $1,400 to $1,600 a year. It would seem that the distance from home and the inconveniences of change of climate, etc., make a higher salary necessary for the beginning workers. Nevertheless the work offers opportunities for advancement, both scientific and financial, which should form a strong inducement to properly equipped men from the United States.

The library forms an important adjunct to scientific work and it is receiving constant additions which, on account of the lack of help at the command of the librarian, are compelled to remain without sufficient cataloguing. The various investigators have established two journal clubs for the discussion of the results of research and to assist in removing that scientific isolation which handicaps the investigator in the tropics. The establishment of the *Philippine Journal of Science* has been a successful means of calling the attention of scientific men in various parts of the world to the work of the bureau and of securing exchanges which are of great service in the work of the department. The director now suggests that this journal be divided into three sections, one devoted to medical subjects, one to general scientific papers and the third to systematic botany and botanic subjects.

Important work has been done in the division of biology in the preparation of a cholera vaccine which has been used with the apparent effect of protecting against cholera those who were inoculated. In Angat, where 1,078 individuals (about one-sixth of the inhabitants) were vaccinated, 122 cases of cholera appeared of which 121 were among the uninoculated and only one among the inoculated. It is the opinion of those who have been actively engaged in this work that the best method of limiting or eradicating cholera in any country is that of vaccination. In addition to the various serums for human diseases, the rinderpest serum has been manufactured, and the occurrence of some cases of tuberculosis among imported cattle in the islands will probably render it necessary for the laboratory to add tuberculin to its list of preparations. The work of Musgrave on amebic dysentery and of Herzog on beriberi has been important, and the Army Board for the Investigation of Tropical Diseases is pursuing work in the biologic laboratory from which practical results may be expected. Studies of mosquitoes have been made and the question of limiting this pest will be considered in the near future.

The botanic work promises to be of commercial importance in the study of the timber and other plant products of the Philippines. The use of locust fungus in an attempt to limit the spread of locusts was unsuccessful—a result which is in accord with the latest experience in South Africa. The chemical department, in addition to the study of oils, gums, resins and fibers suitable for paper-making, has undertaken the study of the medicinal plants of the islands and much material already has been gathered, but a discussion of the results would be premature. Mineral deposits have been investigated and the supply of Philippine coal promises to become sufficient for local use. Asbestos deposits are found in Ilocos Norte, but have not yet been investigated by the bureau.

MILK AND TUBERCULOSIS.

The International Congress on Tuberculosis held in London in 1901 will be chiefly remembered by the startling announcement made by Prof. Koch that bovine and human tuberculosis are produced by different bacilli, and that bovine tuberculosis is transmissible to the human subject to only a very slight extent, if at all. This statement was a veritable "bolt from the blue." Up to that time the propagation of tuberculosis by the agency of infected milk, at any rate of milk drawn from tuberculous cows whose udders were affected, was held to have been proved beyond the shadow of a doubt. The revolutionary announcement of the celebrated German professor has done far more good than harm. It has stimulated research on the subject to a degree never before known, and although even now no hard and fast statement can be made, the results of the numerous investigations which have been undertaken in many countries have immensely increased our knowledge. Commissions have been appointed to investigate the matter in Germany and Great Britain, and searching and exhaustive investigations have been made in the United States and Canada. Independent researches have also been instituted and carried out in perhaps all the civilized countries of the world.

Merely to mention the results arrived at from this mass of evidence would be impossible in the scope of an editorial. It may be said, however, that German authorities generally lean more toward Koch's views than do

American and British investigators. On the whole, German scientific men hold that there is a distinct difference between the micro-organisms of human and bovine tuberculosis, though many notable Germans dissent from these opinions. For example, Behring thinks that the diseases are intercommunicable. Prof. Dungern[1] of the University of Freiburg is stated to have demonstrated that bovine tuberculosis is transmissible not only to man but to apes. American students of this subject as a general rule may be said to incline to the view that human and bovine tuberculosis are intercommunicable. Prof. Theobald Smith,[2] however, is of the opinion that the old notion that all tuberculosis originating in the intestinal tract is of bovine origin, must be abandoned. British investigators, as a rule, adhere more or less strongly to the idea that tuberculous milk is capable of directly infecting, and not infrequently does directly infect, the intestinal tract in young children. With comparatively few exceptions, British medical men believe in the transmissibility of bovine tuberculosis to the human subject by means of infected milk. Dr. Nathan Raw[3] contends that bovine tuberculosis affects young people, is traceable to infected milk and affects the tonsils, the alimentary tract, the glands, and, through the blood, the meninges, the bones, the joints and other parts, while human tuberculosis is air-borne and affects adults by way of the lungs as in pulmonary phthisis.

Recently the theory of the intercommunicability of human and bovine tuberculosis, if theory it still may be called, has received remarkable confirmation from two quarters. A *Bulletin* of the Bureau of Animal Industry of the United States Department of Agriculture was issued a short time ago. The researches referred to in this report were carried out by Drs. Schroeder and Cotton. The conclusions to which they came were most definite and very sweeping. They state that as a result of their experiments they are convinced that a tuberculous cow is more dangerous to the health of man than is the human consumptive.

The report of the Royal British Commission on Human and Bovine Tuberculosis, appointed in 1901 to investigate the infectivity of meat and milk of tuberculous cattle and cows to man, which has also been published recently, gives results from investigations far more exhaustive than those detailed in the American publication. The commission, which was carefully composed and included among others the late Sir Michael Foster, Prof. Sims Woodhead and two well-known veterinary experts, summed up its report as follows: "There can be no doubt that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there also can be no doubt that in the majority at least of these cases the bacillus is introduced through cows' milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis." This statement is sufficiently definite, and while, of course, it will not be taken as the last word on the matter, it must carry a considerable amount of weight. The experiments undertaken by the commissioners seem to have been very thorough. Investigations were made in the bovine body by the introduction of bacillus of human tuberculosis, and another into the effects produced in the bovine body by the introduction under similar conditions of the bacillus of bovine tuberculosis. Animals other than bovine were also experimented on. Recording their conclusions in regard to experiments on anthropoid apes the commissioners stated: "It is clear that the bacillus of bovine tuberculosis will, either by feeding or by inoculation, produce in even a small dose generalized progressive tuberculosis in the anthropoid ape, an animal so nearly related to man."

Further investigations into the subject, especially those by German students, will be awaited with great interest.

Meanwhile it must be conceded that the preponderance of evidence is in favor of the conclusion that bovine tuberculosis is transmissible to man by milk, and hence the hygienic precautions in vogue or proposed find full justification. It must not be overlooked, however, that other avenues of infection are open, such as the contamination of food and drink by human tubercle bacilli, the swallowing of bacilli from dust, or articles contaminated by sputum, with which children may easily soil their fingers, and lastly inhalation of bacilli laden dust or spray. While investigation may be making the inhalation theory less prominent it should not be hastily concluded that no danger is to be apprehended from such inhalation.

1. Lancet, Nov. 4, 1906, p. 1370.
2. Boston Med. and Surg. Jour., Jan. 18, 1906.
3. Lancet, Aug. 5, 1905, p. 365.

THE BORDERLAND IN MEDICAL LIBRARIES.

The medical library movement is assuming promising proportions in this country. In almost every city of fifty thousand inhabitants and in a number of even less population some such project is being vigorously pushed. Certain side issues in the matter seem worthy of having attention directed to them. Not only are books relating to medicine sure to be of interest to the next generation but all books relating to medical affairs of any kind especially to physicians themselves, and all books written by physicians, though on non-medical topics, can scarcely fail to be of interest, As a matter of fact, while old editions of text-books have only exceptionally any interest after a revised edition has been issued, these other books maintain their value from the historical standpoint. In this respect, it is well to remember the change that has come over the attitude of librarians and book collectors with regard to advertisements of all kinds. Many of the old magazines, stored on shelves of general libraries, would be of increased value if they

contained the advertisements which originally appeared in them, but which were removed by the binders.

For library purposes advertisements are now carefully bound in with the reading matter proper, and this method will probably obtain in the future in medical libraries. Many pamphlets and other publications relating only indirectly to medicine, but showing in any way the temper of the times toward physicians, or toward medical questions, will be of distinct significance. Books written by physicians, no matter what the subject, should find a place in medical libraries since they will provide an excellent picture of the occupations of physicians of this and preceding generations, during the moments which they stole from their life work for their pleasure. A goood library collection of works written by physicians, or men closely associated with the medical profession, would contain a large number of works representing valuable contributions to literature. For instance, Dante's works would have to be among them, for he was a member of the guild of the apothecaries in Florence, and Copernicus' works must find a place, for he was a practicing physician as well as an astronomer, and Locke's works, for he was a physician first and a philosopher afterward. These are only some of the greater names, but it would not be hard to mention others. In our own generation some excellent literary work has been done by physicians and in America such names as those of Oliver Wendell Holmes Robert Joyce, and S. Weir Mitchell tell us of men whose literary achievements reflect the highest honor on the profession.

In the hurry of practical life this feature of medical libraries is in danger of being neglected, and it will be a distinct loss to future generations if it is; for, as a rule, it is not hard to make collections of such books, and once they have been shelved, they remain for all time. A list of books by physicians relating to non-medical subjects would be of great interest and if some one could but find the time to prepare such a document, it would prove an excellent guide and doubtless would direct attention to what can be accomplished in this matter. This department need not at all interfere with the collection of the more practical and more urgently important works on medicine, yet it will add greatly to the interest of libraries and their attractiveness for medical men, especially when the library is housed in a building by itself that has something of the nature of a club-house.

CITY EXECUTIVES AND FRAUDULENT CONCERNS.

A jewelry firm selling goods by auction in a neighboring city was recently put out of business by the city executive because of charges preferred against it by the Jewelers' Association. The basis of the accusations against the company was that of misrepresenting the wares sold. The action taken was a good one and reflects credit both on the city administration and the business association bringing up the matter. A medical journal[1] published in the same city asks, pertinently, what would happen if the physicians there should offer a protest against the advertising medical concerns of that city. That these are more guilty of fraud and deception than any jewelry auctioneer could be goes without saying; that they, instead of merely depleting the purse, play fast and loose with the health and lives of their dupes is also evident. Yet not many city executives could be found who would, on the protest of the reputable physicians of that city, put the ubiquitous "medical institutes" and advertising quacks out of business. Whether the moral support given such concerns by the daily press of the city has anything to do with the lack of enthusiasm usually exhibited by city officials under such conditions is a question that the unbiased observer will be forced to ask.

THE DANGERS OF PATHOLOGIC WORK.

Pathologic and bacteriologic laboratory research have their perils, as is every now and then demonstrated by the death of some prominent worker in this field. The latest victim to the cause of science is Dr. Allan Macfadyen.[2] This eminent English bacteriologist, so well known by his work on endotoxins, etc., succumbed to an accidental laboratory infection. Medical history has a long roll of such martyrs, and it is probable that enlistment in this department of scientific service involves not much less risk to life or limb than does the taking up of the profession of the soldier in the present stage of the world's history. Of course, every physician runs certain risks and may be called a soldier of humanity, risking his own health and life for the defense of others. But laboratory workers, and especially those investigating the causes of virulent infections, take special risks and can not always avoid their consequences. Formerly cadaveric blood poisoning was almost the only recognized peril of the pathologist, others being incurred unknowingly if at all. It requires perhaps greater courage to investigate disease when we know that such study involves the handling and cultivation of micro-organisms of the most virulent type. It may even require the direct incurrence of infection in the study of pathologic conditions as yet not fully understood, but none the less formidable. It seems to be in the order of things that every little while some especially valuable life, like that of Dr. Macfadyen, must be sacrificed in this way.

SANITATION VS. INFECTION: ITS LIMITATIONS.

The recent epidemic occurrence of certain infectious diseases in some parts of the country has caused naturally much newspaper comment and some criticism, even by physicians, of the ill success of sanitary boards and officials in preventing such outbreaks. Of course we can hardly expect anything else. The public does not take a judicial view of such matters or recognize the unavoidable conditions that sanitarians have to meet. Modern science has given us the mastery over certain diseases. Smallpox and typhoid fever should be non-existent; that

1. Wis. Med. Jour., January, 1907.
2. THE JOURNAL A. M. A., March 23, 1907, p. 1053.

they do occur is the fault of the general obstinacy of a large section of the human race. There are still some diseases that are not under control, such, for example as scarlet fever with its wide range of symptoms from an almost unrecognizable ailment to a rapidly fatal disease, its capricious contagion, the varying immunity to its infection, and our ignorance as to its germ. One can appreciate the difficulties that must necessarily be met in its ideal prophylaxis and suppression. There is probably no epidemic of scarlet fever in which there are not many walking cases innocently spreading the disease, and some of them perhaps incapable of positive diagnosis by any means at our command. The immunity of many adults is possibly due to their having had the disease in this unrecognized form in early life. Hence the practical impossibility of eradicating the disorder with our present ignorance of its causal organism and its life history. There are other disorders that are likewise protean in their manifestation and more or less impossible in their prophylaxis, but scarlatina is perhaps as striking an illustration as any other disorder of some of our present limitations. In the meanwhile we can only restrict the spread of the disease by isolation, disinfection, etc., wherever possible, recognizing the fact, however, that Eddyism, ignorance and recklessness on the part of the public will counteract much of our best effort. It is to be hoped that the elusive germs of this and many other disorders will before long reveal themselves to the workers in our pathologic institutes, or at least that enough may be learned to leave only matters af academic interest still unknown, as in the case of smallpox and yellow fever. The statement of such facts as these may seem a little platitudinous to medical men, but there is sometimes, even in our profession, a tendency to ignore them.

CEREBROSPINAL MENINGITIS.

According to reports received from Great Britain, cerebrospinal meningitis has broken out in Belfast, has assumed an epidemic form in Glasgow, and has shown itself in Edinburgh and other Scotch cities, some cases having occurred as far north as Inverness. Great Britain has been singularly free in the past from large epidemics of this disease; epidemics have occurred on a small scale, and in recent years sporadic cases have appeared in widely separated parts of the country. The disease has manifested itself in Belfast, in Ireland on a fairly wide scale, and shows few signs of abatement. The death rate has been about 50 per cent. A serum, the joint discovery of Professor Kolle of Berne University and of Professor Wassermann of Berlin, which is claimed to have proved efficacious in Europe, is being used in Belfast, but no reliable data as to results have been yet forthcoming. In Glasgow cerebrospinal meningitis is said to have been simmering for a considerable period, and a year ago the authorities resolved to place the disease on the notifiable list. During the past few weeks the cases of this disease have increased both in number and virulence, and it is stated that in 50 per cent. of the cases the patients were under 5 years of age. One or two cases have occurred in London and a few cases are reported from Dublin. Some useful knowledge concerning the disease was gained by physicians at the time of the New York epidemic in the spring of 1905, and it may be assumed that American physicians know more in regard to the disease and its treatment than do their British confrères. As a matter of fact, however, our knowledge of cerebrospinal meningitis and especially of its effective treatment is elementary. There is no specific for this disease nor do remedies of any description appear to exert much salutary influence on its course. In some cases lumbar puncture is said to have a beneficial action, while in others the operation has been of no avail. Injection of diphtheria antitoxin was tried in several instances in New York in 1905, but the results were not such as to raise any enthusiasm. Osler[1] advises the application of cold to head and spine and also suggests the application of wet cups to the neck in order to relieve the intense pain in the head. Reports from Belfast in regard to the effect of the serum now being used on patients suffering from cerebrospinal meningitis will be awaited with interest.

NOSTRUM ADVERTISEMENTS ON DRUGGISTS' WRAPPING PAPER.

What a delightful situation for the physician who has written a prescription to have the druggist hand out the medicine called for wrapped in a circular extolling the virtues of a nostrum for the relief of the condition for which the patient consulted the physician, and declaring that physicians often fail to understand this condition, but that the company's Royal Balm is never known to fail. It is a wonder that a protest against this measure is not more often raised. As has been noted in our news columns, the Cass County (Ind.) Medical Society at a recent meeting felt strongly enough on this subject to pass resolutions asking druggists to cease this objectionable practice. To back up the request the society offered to furnish plain wrapping paper if the druggists wished them to do so. The matter is worth the attention of other societies.

AIDING THE TUBERCULOUS.

The fight against tuberculosis becomes more strenuous each year and not a month passes but some new organization is formed for the purpose of aiding the consumptive in his fight against the disease. A sixteen-page pamphlet, entitled *Relief*, issued by the St. Louis Society for the Relief of Consumptives, is one of the latest agents in this field. It contains many hints of value to the sufferer and gives much information regarding the conditions under which the consumptive poor live. The object of the society is not to aid in the prevention of tuberculosis—there are other societies doing that—but "to look after the interests of the consumptives of St. Louis, not otherwise provided for."

1. Brit. Med. Jour., Feb. 16, 1907.

Medical News

COLORADO.

Must Remove House Tents.—The Fire and Police Board of Denver, on March 11, issued an order that all house tents in the city limits must be removed. It is said that there are thousands of house tents in Denver, a large portion of which are occupied by consumptives.

Do Not Desire Publicity.—At a recent meeting of the Boulder County Medical Society, the secretary was instructed to request the newspapers in the county to refrain from printing the names of any members of the society in connection with any cases to which they had been called professionally.

Medical School Removal Bill Wins.—On March 7 the House of Representatives adopted, by a vote of 51 to 10, the bill presented by Mr. Healy of Boulder, to allow the last two years of the medical course at the Colorado State University to be given at Denver. The bill provided that no additional expense should be saddled on the state by the change.

ILLINOIS.

Schools Closed on Account of Smallpox.—It is stated that smallpox, which is reported prevalent among the suburban towns along the Rock Island Railroad, has caused the closure of the Calumet high school, whose 200 pupils have been direcently exposed to infection.

Internes in Eye Hospital.—The Illinois Civil Service Commission is to hold examinations for surgeons, pathologsits and internes in the Illinois Charitable Eye and Ear Infirmary April 16. Applications should be addressed to the commission at Springfield before April 13.

Joint Society Meeting.—At a joint meeting of the Vermilion, Piatt and Champaign County medical societies, held at Champaign recently, 53 members of the three societies were present and the visiting physicians were entertained at supper at the Hotel Beardsley. At the evening session Dr. Charles E. Wilkinson, Danville, vice-president of the Vermilion County Medical Society, presided.

Reorganization of Hospital Staff.—The directors of the Brokaw Hospital, Bloomington, have adopted a resolution declaring that as a considerable number of the members of the staff have lost interest in the work and aims of the hospital, the medical staff is dissolved, with a view to future organization of a staff with smaller membership and on such lines as will inspire greater interest on the part of its members.

Personal.—Dr. Ernest B. Mammen and daughter, Bloomington, expect to sail early in April for Europe, via the Mediterranean.——Dr. David T. Douglas, Colfax, expects to sail for Europe about April 1.——Dr. Archibald E. Franklin, Aurora, who has been ill for several weeks past with cirrhosis of the liver, has gone to Canada.——Dr. Lawrence R. Ryan, Galesburg, has returned from an extensive trip through the western and southwestern states.

Legislative Matters.—The house committee on license considered, on March 20, the itinerant medicine peddlers' bills known as senate No. 341 and house No. 474, to which reference was made in THE JOURNAL of March 16 and 23. A representative of the State Board of Health was present to oppose the passage of the bills. The hearing was deferred until April 3, when action will be taken by the committee. The legislative committee of the state medical society and the State Board of Health have sent communications to the physicians of the 34 counties represented by the members of the license committee, urging that the passage of these bills be opposed in the interest of the public health. The antivivisection bill (senate No. 267, see THE JOURNAL of March 16) and the osteopathic bills (house Nos. 318 and 319) abstracted in THE JOURNAL of March 9, have been favorably reported by the committees to which they were reported. The legislative committee of the state medical society has sent out a letter to the physicians of the state urging their opposition to these bills. The other osteopathic bills, mentioned in THE JOURNAL of February 9, viz., senate No. 21 and house No. 66, are apparently slumbering in their respective committees, but may resume activity at any day. The State Board of Health bill (house No. 568), amending the provisions of the sanitary act of 1877, is now on final passage in the House of Representatives. The State Board of Health has had introduced a bill making necessary amendments to the medical practice act. This bill, which has been approved by the committee on public relations of the Chicago Medical Society, is in the committee on sanitary affairs of the House of Representatives.

Chicago.

Personal.—Dr. Henry B. Favill has been elected director of the Chicago Relief and Aid Society.——Dr. Alfred C. Girard, brigadier-general, U. S. Army, retired, has been appointed librarian of the medical department of the John Crerar Library. He is now rearranging the library, especially the Senn collection, so that it may be made more easily accessible to the profession.

Senn Lectures.—Beginning April 3 Dr. Nicholas Senn will lecture on military surgery every Wednesday at 5 p. m. at Rush Medical College, taking up in succession ancient and medieval military surgery. the period of awakening of military surgery; the dawn of modern military surgery, and the evolution of the military surgeon. To these lectures military surgeons and the medical profession at large will be welcome.

Ambulance Service.—During the first four weeks of the ambulance service under the supervision of the health department 915 calls were responded to by the ambulance surgeons; 577 ill and injured were removed to hospitals; 296 individuals received first aid, and of this number 99 were taken to their homes; 67 patients with contagious diseases were removed to the county and other hospitals; 49 miscellaneous cases, including 5 insane and destitute persons, were cared for, and 915 individual reports were received and filed by the medical inspector.

Deaths of the Week.—The deaths for the week ended March 23 numbered 700, 16 more than for the previous week and 145 more than for the corresponding week of last year, the respective annual death rates being 17.29, 16.92 and 14.10 per 1,000. Of the increase in deaths, as compared with last week, 15 were due to nephritis; 27 to consumption; 3 to diphtheria; 15 to nervous diseases; 6 to scarlet fever, and 4 to typhoid fever. Pneumonia, as is usual at this time of the year, led the death causes with 137, followed by consumption, with 104; heart disease, with 57; nephritis, with 55; nervous diseases, with 34; violence (including suicide), with 33; cancer, with 27; scarlet fever and acute intestinal diseases, each with 24, and bronchitis, with 20. The first death from smallpox since September, 1905, occurred during the week; an unvaccinated child whose case was mistakenly diagnosed as measles.

INDIANA.

Reception for Faculty and Graduates.—A reception was given to the faculty and graduates of the Indiana Medical College at Neuronhurst March 16. Dr. Mary Spink and other members of the faculty received the guests. Dr. Fletcher's residence was thrown open for a smoker and there was dancing in the gymnasium.

February Disease and Death.—Influenza was the most prevalent during the month, and then in order followed bronchitis, pneumonia and tonsillitis. Scarlet fever was seventh in area of prevalence and diphtheria tenth. Twelve schools were closed on account of scarlet fever, but during the month only six deaths occurred from that disease. One death occurred from smallpox; 241 cases of disease were reported in 25 counties, while in the corresponding month of 1906 152 cases in 15 counties were reported. Typhoid fever was present in 45 counties, 312 cases being reported, with 46 deaths. There were 131 cases of diphtheria, with 30 deaths, reported from 37 counties. Pneumonia caused 664 deaths, or 261 more than in the corresponding week of 1906. The record shows a greater prevalence of sickness and higher death rate for February than for the corresponding month of 1906.

Personal.—At the annual meeting of the Physicians' Defense Company, Fort Wayne, Dr. Miles F. Porter was re-elected president.——Dr. Zachary T. Funk is seriously ill at his home in Corydon.——Dr. John M. Nickles, Sellersburg, is in Florida on account of his health.——Dr. Jas H. Ford, Indianapolis, has been elected medical director of the Jefferson Life Insurance Company in that city.——Dr. J. W. Vizard, Pleasant Mills, representative in the legislature from Adams County, was presented by his fellow-members with a set of surgical instruments in appreciation of his services to them.——Dr. Walter N. Fowler, Bluffton, sails from New York with the Wellman expedition April 4.——Dr. Edward J. DuBois, assistant in the laboratory of the Indiana State Board of Health, will enter Harvard University for special work in bacteriology early in April.——Dr. Frederick P. Buche, Richmond, has been ap-

pointed a member of the medical staff of the Reed Memorial Hospital in that city.——Dr. John N. Hurty, Indianapolis, secretary of the State Board of Health, has had his salary increased from $2,400 to $3,000 a year.

MARYLAND.

Baltimore.

Damage Suit Lost.—The heirs of the late Dr. P. H. Reiche, who sued the City Railway for $100,000 on account of the death of Dr. Reiche, had an adverse verdict rendered in the Circuit Court. It is said that they will carry the case to the Court of Appeals.

Personal.—Dr. Newdigate M. Owensby, chief of the medical staff of Bayview Asylum, in charge of the insane, sailed for Europe March 27.——The following are candidates for the city council: Drs. H. Edward F. Grempler, Tilghman B. Marden, Joseph E. Muse, John H. Groshans and George Heller. ——Prof. Joseph P. Remington addressed the Baltimore Pharmaceutical Association March 20 on proprietary remedies and the relations of the medical and pharmaceutical professions. Many physicians were present.

MASSACHUSETTS.

Epidemic Diseases.—Out of 80 cases of scarlet fever reported to the Gardner board of health since January 1, 20 have been fatal, and out of 18 cases of diphtheria during the same period two children have died.

Laboratory for Food Study.—The executive committee of the Carnegie Institution, Washington, voted to establish a laboratory in Boston at a cost of $100,000, to carry out exhaustive research of the nutritive value of food.

To Clean Boston Harbor.—The House of Representatives has taken the first step looking to the ultimate cleaning of Boston harbor by passing the order introduced by Representative Hoag directing the State Board of Health to report to the next General Court as to the best means to prevent the further pollution by discharge of sewage at Moon Island.

Personal.—Dr. John A. Leitch has been appointed town physician of Andover.——Dr. Victor A. Reed, Lawrence, is convalescent after a long illness.——Dr. Thomas M. Durell, Somerville, medical examiner of Middlesex, was seriously injured in a runaway accident recently. He was removed to the Somerville Hospital.——Dr. Nathaniel L. Berry has resigned as city chemist and bacteriologist of the Lynn board of health, to take effect April 1.

Hospital Notes.—The trustees of the Boston City Hospital have petitioned the city council that East Concord Street, between Harrison Avenue and Albany Street, be closed to all heavy traffic. This part of the street bounds the hospital grounds on one side.——The mayor of Boston has recommended an appropriation of $83,000 as a new fund for the support and care of the feeble-minded, and the matter has been referred to the committee on appropriations of the board of aldermen.

State Colony for Insane.—The annual report of the State Colony for the Insane showed that at the beginning of the year there were 152 male and 101 female patients, a total of 253. During the year 184 were admitted, making the total number of patients in the colony at the close of the fiscal year, 403, 278 of whom were men and 125 women. During the year 445 patients were cared for, 312 men and 133 women. Of these 34 men and 8 women were discharged, 2 as recovered, 3 as capable of self-support, 1 as improved and 1 as not improved. Twelve men and 8 women were transferred to other institutions, and 6 men died from chronic diseases. Supt. Joseph B. Howland recommends that the senate be asked to make an appropriation for water supply, feed barn and stable; also that he be given permission to establish a burial ground on the colony land.

MICHIGAN.

Medical Building for Detroit.—At a meeting of the Wayne County Medical Society, March 16, plans were formulated for the erection and maintenance of a building to be used for meetings of the society, medical library and other uses of the profession. The matter was referred to a committee of seven, of whom Dr. Charles G. Jennings is chairman.

Personal.—Dr. Ernest L. Shurly, Detroit, who has been spending the winter in Europe, sails for home April 5.——Dr. Ernest F. Crummer has been elected president of Essexville. ——Dr. Albert M. Barrett has been appointed professor of psychiatry and neurology at the University of Michigan and placed in charge of the neurology clinics at the University Hospital.——Dr. Albert H. Steinbrecher, Detroit, has returned from Europe.

MISSOURI.

In Memory of Dr. Hodgen.—The St. Louis Medical Society of Missouri decided to commemorate suitably the memory of the late Dr. John T. Hogden, whose death occurred April 28, 1882. The following committee was appointed: Drs. Warren B. Outten, chairman; Charles D. Stevens, secretary; George Homan, Frank J. Lutz, H. C. Fairbrother (East St. Louis), John B. Shapleigh, H. C. Dalton, A. E. Ewing and B. M. Hypes. It is proposed to make the event an exceptional one in character, as Dr. Hodgen was a commanding figure in the profession and made a deep impression on his colleagues as a practitioner and on his students and classes as a teacher.

Legislative Enactments.—The committee on public health and legislation have reported to the St. Louis Medical Society of Missouri their success in having passed by the state legislature the "abortion bill," providing for the punishment of all parties concerned in producing criminal abortion, also a bill providing for the admission as evidence of the ante-mortem statement of women following an abortion for the prosecution of the abortionist. A bill was also passed amending the penal clause of the medical practice act, which will give the State Board of Health power to revoke the licenses of charlatans, who, owing to certain flaws in the wording of the act, had been immunne from punishment. A pure food bill was also passed which is identical with the national Food and Drugs Act. A bill has been passed empowering the health commissioner to regulate "private hospitals," "baby farms," etc. In fact, owing to the activity of the committee, all bills asked for were passed, with one exception.

NEW YORK.

Venerable Medical Society.—The Medical Society of the County of Westchester has celebrated its one hundred and tenth anniversary by a dinner at the Hotel Astor. The society was organized in 1797 and is said to be the oldest organization of its kind in the United States. Dr. H. Beattie Brown of Yonkers presided and 123 Westchester physicians were present.

Roosevelt Hospital Asks Hearing.—The Huth hospital bill has been recommitted to the cities committees for a hearing through the influence of Roosevelt Hospital. This bill, advocated by Coroner Harburg, was intended to eliminate the alleged practice of some hospitals in New York City of transferring patients about to die to public hospitals in order to keep down their own death rate.

New York City.

Smallpox in Steerage.—A case of smallpox was discovered in the steerage of the Hamburg-American liner *Pennsylvania*, which prevented her leaving quarantine or landing passengers. There were more than 2,000 steerage passengers on the vessel, all of whom must be vaccinated.

Legacies to Hospitals.—By the will of the late Francis P. Furnald the trustees of the Presbyterian Hospital will receive on the death of the testator's wife $100,000, which is to be spent in maintaining beds for wealthy applicants.——The Bethany Day Nursery will also receive $100,000 in memory of Mrs. Furnald.

Personal.—Dr. and Mrs. Frederick Gould and Dr. and Mrs. Joseph Miller sailed for Rotterdam on March 20 on the *Nieuw Amsterdam*.——Dr. Henry W. Frink, a member of the second surgical division of Bellevue Hospital, has been operated on for septicemia and is still in a critical condition.—— Dr. Bernard Lazarus, while making a professional call, was robbed of $107 and his watch, worth $150.——On March 8 Dr. William B. Cook was called in a similar way and lost $500 and a watch worth $125.

Federation of Charities.—The directors of the Jewish Institutions in the city came together March 21 to discuss the Federation of Contributors to Jewish Communal Institutions, which was organized a few months ago. The idea of the federation is that all moneys donated to charities be given in charge of the federation for distribution as it should see fit. Since the federation has been organized $117,000 has been subscribed, which was $66,000 more than was given by the same subscribers before the existence of the organization. Some opposed the federation on the ground that a contributor should be allowed to designate the disposition of his money.

Health Board Takes Decided Stand on Milk Question.—The board of health issued a statement to the effect that it had for many years recommended the boiling or pasteurization of

all milk not certified that was used in the feeding of infants. The department has done everything in its power to extend the usefulness of the Strauss milk depots and had provided in its sanitary code for the sale of pasteurized milk. Dr. Darlington also called the attention of the board at its last meeting to the fact that unless his corps of inspectors was increased so as to enable him to make inspection of general herds equivalent to certification, he should be compelled to take a stand compelling the pasteurization of all milk entering the city and not certified. The department passed a resolution defining the line between true and commercial pasteurization, which demands that all milk be labeled to show whether true pasteurization has or has not been employed. The resolution calling for reports regarding the health of employés and their families was also passed.

Health Resolutions.—The following resolutions have been adopted by the Section on Public Health of the New York Academy of Medicine:

Resolved, That the Section on Public Health recommends that the New York Academy of Medicine urge on the Department of Health of New York City the following requirement, namely, that the inspectors of the Department of Health observe the same precautions as to clothing and personal disinfection, when their duties bring them into contact with communicable diseases, as are required by the physicians in attendance at the Willard Parker Hospital.

Resolved, (1) That the Section on Public Health of the New York Academy of Medicine does not believe in the necessity of the compulsory pasteurization of all of the milk supply of New York City, but recommends for the present to all those whose milk can not be proved to be thoroughly inspected and wholesome, and mainly the milk destined for the feeding of infants unless it is "certified," to boil their milk when delivered in the morning for three minutes.

Resolved, (2) That the health of the City of New York demands a persistence in the policy of supervision of farms, dairies, and creameries, supervision of all the milk during transit and on delivery in the city, and supervision at the points of distribution in the city to the consumer, whether the milk that is distributed has been pasteurized or not.

Resolved, (3) That local and state health authorities and the Bureau of Animal Industry of the United States Department of Agriculture should cooperate with the milk producers to prevent the occurrence of communicable disease in cattle and their caretakers.

Resolved, (4) That the Section on Public Health recommends that the New York Academy of Medicine adopt the above resolutions, and that a copy be sent to the members of the Committee on Public Health of the Board of Aldermen, to the Committee of the New York State Legislature having under consideration the Reece bill, and to the medical and the lay press.

NORTH CAROLINA.

Class Returns to College.—The sophomore class of Leonard School of Medicine, Raleigh, which was suspended because of its opposition to the disciplining of one of its members, has returned to college, accepting unconditionally the terms of the faculty.

Personal.—Dr. Richard H. Lewis, Raleigh, secretary of the State Board of Health, has recently been re-elected secretary of the State Audubon Society.——Dr. George W. Long, Graham, formerly president of the state medical society, will deliver an address to the graduates in medicine at the State University next month.——Dr. Alpheus E. Disosway, Plymouth, has been appointed surgeon of the North Carolina Naval Reserve, with the rank of lieutenant.

OHIO.

Communicable Diseases.—The public schools of Wakeman have been closed on account of scarlet fever.——There is much scarlet fever in Mt. Vernon.——The State Reformatory has been placed under quarantine for two weeks on account of smallpox.——At Canton two cases of smallpox have been discovered.——Spinal meningitis is reported in and near Castalia, where 10 cases have been reported up to March 1, with seven deaths.——Measles is reported to be epidemic around Piqua and at Bowlusville and Springfield, where about 75 cases are reported.

Merger of Medical Schools.—The consolidation of the Ohio Medical University and the Starling Medical College, Columbus, has been consummated and a charter has been issued to the combined institutions under the name of The Starling-Ohio Medical College. The board of trustees of the combined institutions as as follows: President, Drs. W. O. Thompson of the Ohio State University; Charles S. Hamilton, William J. Means, Charles F. Clark, Andrew J. Timberman, Thomas C. Hoover, John E. Brown, Frank Winders; Messrs William R. Lazenby, Edgar B. Kinkead; Fred J. Heer and H. J. Booth. Dr. Thompson has been elected president and Dr. William J. Means, treasurer.

Personal.—Dr. Robert C. Longfellow, Toledo, has completed and moved into his new laboratory, the Toledo Clinical Laboratory.——Dr. and Mrs. William B. Van Note, Lima, are taking a trip to Cuba.——Dr. W. A. Welch, Canton, has been appointed a member of the medical staff of Newburgh Insane Hospital.——Dr. Harry W. Blair has been made health officer of Mount Vernon.——Dr. Wi iam F. Emery, Ashland, has been elected censor of the Ashland County Medical Society to fill a vacant term.——Dr. Vogt G. Wolfe, Urbana, was operated on at Grant Hospital, Columbus, March 15, for appendicitis.——Dr. Edwin J. Emerick, Columbus, on March 19, was elected superintendent of the Columbus State Hospital for Feeble-Minded Youth, vice Dr. Estelle H. Rovick, resigned.——Dr. S. M. Sherman has been appointed a member of the State Board of Health for five years.——Dr. Charles H. Clark, Washington, D. C., was elected superintendent of the Newburgh Insane Asylum, March 20, vice Dr. Adams B. Howard, resigned.——Dr. Arthur G. Hyde, Rowe, has been appointed assistant physician at the Cleveland State Hospital.——Dr. and Mrs. John E. Myers, Springfield, are taking a trip to California.——Dr. I. H. Hague, Shreve, is reported to be critically ill with cerebral hemorrhage.——Dr. George D. Upson, Cleveland, is recovering from an operation for appendicitis at the Charity Hospital.——Dr. Theron S. Wilson, Findlay, has been elected censor of the Hancock County Medical Society.

PENNSYLVANIA.

Typhoid Epidemic.—Typhoid fever is epidemic in the village of Trainer, near Chester. Two persons, an adult and a child, are dead, and several men, women and children are suffering with the disease.

Examination for Internes.—An examination for the appointment of two resident physicians for the Easton Hospital, Easton, Pa., will be held at the hospital on Saturday, April 6, 1907, at 11 a. m.

Inspection of Hospital.—State Senators Thompson, Gerberich and Wilbert visited the Pottstown Hospital March 16, to inspect the institution and to investigate the claims made for $15,000 state appropriation for maintenance and $5,000 toward a new surgical ward. They were satisfied with the business-like appearance of things, but said that there were too many free patients and not enough cash subscriptions to maintain the hospital.

Bill to Prohibit Establishment of More Hospitals in Philadelphia.—Representative Stradling has introduced a bill in the legislature to prevent the establishment of any more hospitals in built-up sections of Philadelphia. Mr. Stradling explained that it was intended to revive a statute repealed in 1895 through the efforts of Mayor Ashbridge, when it was desired to move the Municipal Hospital to its present location. That purpose having been accomplished, he believed that it is in the interests of the city to replace the restriction.

Philadelphia.

Society Elects Officers.—At its recent meeting the Philadelphia Neurological Society elected Dr. Alfred Gordon, president, and Dr. T. M. Weisenburg, secretary, for 1907.

Assistant Bacteriologist Appointed.—Director Coplin has appointed Dr. Evelyn Witner, Germantown, to be second assistant bacteriologist in the bureau of health. The vacancy was caused by the recent resignation of Dr. Mary E. Pennington, who will engage in private bacteriologic work.

Children's Ward Dedicated.—The dedication of the new children's ward of the Methodist Episcopal Hospital took place March 20. It was recently built at a cost of $7,700 and has room for 40 beds. The ward is not yet occupied and is the first separate accommodations for children the hospital has had.

Twenty-fifth Annual Banquet of Medical Class.—Sixty physicians, members of the medical class of 1882 of the University of Pennsylvania, held their twenty-fifth annual banquet March 19. Dr. Horace Jayne presided. Dr. James Tyson was the guest of honor. Dr. Tyson is one of the three surviving members of the faculty at the time of the 1882 graduating exercises. Historical sketches were read by Drs. Judson Daland and William Johnson Taylor.

Bequests.—According to the will of the late Frederick Bauer, $100 is left to the German Hospital.——The will of Mary A. Parker devises $1,000 to the Episcopal Hospital.——According to the will of Samuel Elkin, the Jewish Hospital receives $5,000, the Jefferson Hospital, operating department, $3,000, the Episcopal Hospital $5,000, Presbyterian Hospital $5,000, St. Agnes' Hospital $5,000, and the Home for Crippled Jewish Children $10,000.

Deaths.—With 688 deaths reported to the bureau of health in the week ended March 23, the number for any other week this winter is largely exceeded. These figures show that there were 97 more deaths than in the corresponding week of last year and 33 more than the number reported in the previous week. There were 111 deaths alone from pneumonia, which with other diseases of the lungs caused the increase in the death rate; 136 new cases of typhoid are reported, a decrease of 167 as compared with those returned last week.

Symposium on Standard Remedies vs. Nostrums.—A symposium on standard remedies as against nostrums will occupy the regular stated meeting of the Philadelphia Branch of the American Pharmaceutical Association, to be held at the College of Physicians April 2, 1907, at 8 p. m. Dr. M. S. Mussell will read a paper on "Simplicity in Medication and the Evident Duty of the Pharmacist." I. V. S. Stanislaus, Ph.G., will speak on "The Need for Discouraging the Use of 'Patent' as Well as Proprietary Medicines." Dr. N. Clayton Thrush will speak on "The Value of U. S. Pharmacopeial and N. F. Preparations as Compared with Proprietaries," and Joseph P. Remington, Ph.D., on "The Exhibition of U. S. Pharmacopeial and N. F. Preparations at the Coming Session of the American Medical Association."

The New Frankford Hospital.—The return of a committee which visited Harrisburg during the past week has strengthened the hope of the people of the suburb of Frankford regarding the appropriation of $140,000 desired for the Frankford Hospital. Of this $100,000 is to complete the new building now in course of erection and $40,000 for two years' maintenance. The report of the hospital, recently issued, shows that during the past year 14,146 cases were treated, against 13,914 for the previous 15 months. In order to provide for this increased demand the capacity of the building was taxed to its utmost. In the accident ward 1,947 cases were treated, and 464 medical and surgical cases were admitted to the hospital. Of this number 381 patients were treated free of cost. In the dispensary 2,799 new patients were treated. Last year the trustees of the hospital purchased as a site for the new building the property at the southeast corner of Frankford Avenue and Wakeling Street, and the house is now being remodeled for an administration building, private wards, quarters for physicians and nurses and a temporary operating-room. In the rear of this building a modern two-story building is being erected for a dispensary ward and for general hospital purposes. It is hoped that it will be completed by the early part of July, when the hospital will celebrate its fourth anniversary.

TENNESSEE.

Epidemic Diseases.—The health officer of Pulaski County reports three cases of smallpox near Chattanooga.——Several new cases of smallpox are reported near Dresden.——Measles is reported to be epidemic in Memphis.

Personal.—Dr. Charles A. Abernathy, Pulaski, has been appointed a member of the State Board of Medical Examiners, vice Dr. Robert Pillow, Columbia.——In the suit of Dr. Andrew M. Trawick against the Nashville Railway and Light Company for personal injuries he has been given a judgment for $7,000.——Dr. Bennett G. Henning, Memphis, recently suffered severe bruises in a collision between his carriage and a street car.——Dr. William B. St. John, Bristol, is visiting in Los Angeles.——A defective flue in the residence of Dr. John R. Fowlkes, Greenfield, caused the destruction of the house by fire.

Medical Societies Meet.—At the annual meeting of the Memphis-Shelby County Medical Society, March 19, Dr. Alexander Erskine, Memphis, was elected president; Dr. George R. Livermore, Memphis, vice-president; Dr. J. Wesley Price, Memphis, secretary (re-elected). The following delegates were elected to the State Medical Association: Drs. Louis Leroy and Max Goltman, Memphis, and Elgin K. Leake, Collierville; alternates, Drs. Newton F. Raines and John L. Jelks, Memphis, and William H. Baldwin, New South Memphis.——The Obion County Medical Society at its annual meeting elected the following officers: President, Dr. David M. Pearce, Union City; vice-president, Dr. Philip N. Matlock, Masonhall; secretary, Dr. Marvin A. Blanton, Union City; treasurer, Dr. James M. Rippey, Union City; censor, Dr. Virgil J. Jernigan, Obion; delegate to state medical asssociation, Dr. Marvin A. Blanton, Union City, and alternate, Dr. Virgil J. Jernigan, Obion.——Roane County Medical Society at its annual meeting, held in Harriman, March 15, elected the following officers: President, Dr. Joseph J. Waller, Oliver Springs; vice-president, Dr. John Roberts, Kingston; secretary, Dr. George C. G. Givan, Harriman (re-elected); treasurer, Dr. Charles W. Greene, Harriman (re-elected); delegate to the state medical association, Dr. George C. G. Givan, Harriman; alternate, Dr. John Morgan Clack, Rockwood.

TEXAS.

Yellow Fever on Steamer.—A case of yellow fever was discovered on the British steamer *Basil*, which arrived in port March 16, nine days out from Para, Brazil. The patient was conveyed to St. Mary's Infirmary, where he died. The steamer was thoroughly fumigated and placed under guard in quarantine the required six days, to determine whether there were any other cases.

Personal.—Dr. L. O. Dudgeon, formerly of Galveston, physician at the San Pedro mine, Mexico, for the last two years, was thrown from a street car in a railway accident and sustained a compound comminuted fracture of the pelvis and severe scalp wounnds.——Dr. John S. Berry, Waxahachie, has been appointed health officer of Ellis, vice Dr. Charles W. Simpson, resigned.——Dr. Isaac F. Johnson, Gatesville, has been appointed physician at the State Reformatory.——Dr. J. W. McLaughlin, Jr., Austin, has been appointed attending physician at the State Institute for the Blind in that city, vice Dr. S. E. Hudson.——Drs. John B. Burford, Rosebud, and Judson M. Andrews, Wharton, are making a tour of inspection of the fruit ports in Central America.

Epidemic Diseases.—Scarlet fever is reported to be epidemic at Georgetown and Justin.——Diphtheria is said to be epidemic at Justin.——Influenza i said to be epidemic at Calvert, San Angelo, Waco, Fort Worth, and in fact all over eastern Texas.——Measles is reported to be epidemic in Waco and Dodge, where the public school has been indefinitely suspended.——Measles is reported to be epidemic at Justin, Coupland, Denton and Temple.——On account of the prevalence of smallpox in Navosota the pupils of the public school were vaccinated and the school closed for thorough fumigation.——More than 3,000 vaccinations have been performed in Houston up to March 1.——Scarlet fever seems to be most prevalent in the districts between Austin, Dallas and Fort Worth. Many of the cases are of a mild type.——Houston reports 30 cases at the pest house March 11.——From Raines County 102 cases of smallpox were reported.

GENERAL.

Ray Medical Society.—A notice has been received that the Ray Medical Society, which is composed entirely of practitioners of the name of "Ray," whose last meeting was held in St. Louis in 1904, will hold a reunion this year at either Newark or Los Angeles. The date and place of meeting are not yet definitely determined.

Urge Check of Leprosy.—A strong appeal has been made to the Mexican authorities for measures to prevent the spread of leprosy at Culiacan. Many lepers are said to be in that city and the disease is reported steadily to be increasing. For some time the Mexican government has talked of establishing a leper colony on the Tres Marias Islands in the Pacific Ocean, but thus far nothing has been done.

Saved from Drowning.—The American squadron, which arrived at Shanghai from Nanking, March 18, reports a daring rescue by Ensign John C. Fremont, Jr. While the vessels were anchored at Chin Kiang, Dr. Paul R. Stalnaker of the *West Virginia* fell overboard. Ensign Fremont, although encumbered by a heavy overcoat, jumped over after the surgeon and saved him from drowning.

Government Takes Over Quarantine.—Dr. Joseph H. White, United States Public Health and Marine-Hospital Service, has been appointed quarantine inspector for Louisiana, Mississippi and the Central American fruit ports. This is the first effect of the assumption of the maritime quarantine by the Federal Government. By this enlargement of his scope of action Dr. White has been given sanitary jurisdiction over a large part of Central America.

National Arbitration and Peace Congress.—This congress is to be held in New York, April 14-17, to advocate the peaceful settlement of international misunderstandings. The President of the American Medical Association was asked to appoint two delegates, and he has appointed Dr. Abraham Jacobi, New York, and Dr. John H. Muser, Philadelphia. Among those who are to deliver addresses are the following: Hon. James Bryce; Baron d'Estournelles de Constant (France); Baron Descamps (Belgium); President Roosevelt; Hon. Elihu Root, Secretary of State; Hon. Oscar S. Straus, Secretary of Commerce and Labor; Gov. Charles E. Hughes; Mr. William Jennings Bryan; Archbishop Farley.

Visit of German Ophthalmologist.—Prof. Carl Hess, the famous ophthalmologist of Würzburg, Bavaria, will be a guest of the Section on Ophthalmology of the American Medical Association at the Atlantic City session in June. He comes in April at the order of the Kaiser to deliver lectures before the universities of Pennsylvania, Chicago and New York. He will sail for America April 9. In Philadelphia he will be the guest of Dr. Charles H. Frazier, dean of the medical school of the university.

Health Defense League Incorporates.—The Public Health Defense League, which was formed to work against practices and conditions of every kind that are dangerous to the public health and morals and to assist in the enforcement of laws against quackery and charlatanism, and the prevention of adulteration of drugs and food substances, and the sale of narcotics, alcohol and dangerous substances, filed corporation papers with the Secretary of State on March 15. The directors include Austen G. Fox, Dr. Ernest J. Lederele, Rev. Thomas R. Slicer, Dr. Thomas Darlington, New York; Howard J. Rogers, Albany; Robert E. Belcher, Boston, and Henry W. Cottell, Philadelphia.

Health of Canal Zone.—In the report for January of Col. William C. Gorgas, M.D., U. S. Army, chief sanitary officer of the Panama Canal Zone, he states that the principal causes of death among the employés were pneumonia, which caused 17 deaths, and malaria, which caused 12. In August last the first-named disease caused 55 deaths and malaria 29. Among the 5,000 American employés there were only 5 deaths, equivalent to an annual death rate of 12 per 1,000. No death occurred among the 800 American women and children in the zone. During January more than 5,600 people arrived in the Canal Zone, and the working force was increased by nearly 2,000. During August, 1906, 42 out of every thousand men were on the sick list every day. In December the death rate dropped to 29 per thousand and in January it was 26 per thousand.

Warning Against Forger.—The H. K. Mulford Company, Philadelphia, has notified us of the attempts made by one Remus J. Barrow, M.D., to victimize a number of physicians and manufacturers in Philadelphia. The detective service of the Philadelphia police has sent out a warning, stating the following facts about the man:

Age, 39; height, 5 ft. 9 in.; weight, about 190 pounds; light eyes; very light hair, worn closely cropped, except front, which is usually worn curly pompadour, parted in center; regular, small, even teeth, prominent when talking; square, firm jaws; very broad shoulders; smooth face. German, speaks English with strong German accent, also Spanish and French. When last seen wore long Surtout overcoat. Wears hat very low on head. Wears in lapel of coat the button of American Medical Association, i. e., dark blue enamel with red cross in center, gold line and border, with initials A. M. A. He claims to practice medicine and to own a private hospital in León, Mexico, as well as some mines. His method of operation is to leave large orders with wholesale druggists, manufacturers of pharmaceuticals, chemicals, surgical and hospital supplies, to pay for same with checks or forged bank drafts drawn on Bank of Aguas Callentes, Mexico, in excess of purchase; he has the balance placed to his credit for future purchases, but later secures a portion of the overpayment in cash.

CANADA.

Smallpox Epidemic.—Smallpox is epidemic in Charlottetown, P. E. I. All schools, churches and other places of public meeting have been closed.

Personal.—Dr. H. B. Cushing, Montreal, is returning home after graduate work in Germany.——Dr. S. C. Corbett, Winnipeg, sailed from Boston March 16 for the Mediterranean.——Dr. P. H. Bryce, chief medical officer of the department of the interior of Canada, has left Ottawa for the Pacific Coast to arrange for the erection of the new detention hospital in Vancouver.

Medical Course Lengthened.—Henceforth any one desiring to obtain the degree of M.D., C.M., from McGill University must attend the college five years instead of four. The present curriculum will be spread out so that studies will continue uninterruptedly for the five years. The bill before the recent session of the Quebec legislature, to make a five years' course compulsory in the province of Quebec, was thrown out by the legislative council.

New Association to be Organinzed.—The superintendents of the various hospitals in Ontario will hold a meeting in Toronto to form the Association of Hospital Superintendents of Ontario. Dr. R. R. Ross, Buffalo, president of the American Hospital Superintendents' Association, will give an address. Dr. Edward Ryan of the Provincial Hospital for the Insane at Kingston, will read a paper on the relation of the work of general hospitals to that of hospitals for the insane. The Toronto superintendents will entertain the visiting superintendents at luncheon in the parliament buildings, where the meeting is to be held.

Hospital News.—It has been decided to demolish the old building of the Montreal General Hospital and to erect a new one at a cost of $500,000. The new hospital will occupy the old site with the addition recently purchased at a cost of $120,000, and the grounds will now occupy an entire square. It is the intention of the governors to place the hospital on an equal footing with the best hospitals on this continent.——The Marine Hospital at St. Catherine's, Ont., has been given, for a new hospital, a large modern residence and three acres of land, valued at $15,000. The residence will be used for a nurses' home and a new hospital will be built at once.——A movement to establish a Jewish hospital in Montreal is progressing favorably. It will be known as the Mount Sinai Hospital.——The special committee of the Toronto General Hospital has returned from visiting various hospitals in the United States and reports that while it costs $1.33 to treat each patient per day in the Toronto General Hospital, it costs from $1.97 to $2.50 in the hospitals visited in New York, Philadelphia and Baltimore.

FOREIGN.

Physicians in Legislative Assemblies.—We learn that the new Russian douma contains 28 members who are physicians, while the newly elected German reichstag has 7 medical members.

Antituberculosis Congress in Portugal.—The fourth annual meeting of the forces organized in Portugal to combat tuberculosis will be held at Oporto April 4 to 9. An exhibition along the line of the tuberculosis exhibitions in this country will accompany the congress and be continued for some time afterward.

Plague in China.—The United States deputy consul-general at Newchwang reports that an epidemic of plague has again broken out in that city and that the disease seems to be in the most malignant form, death occurring within a few hours. The first symptoms are headache and fainting spells, which are followed in a few hours by bloody foam running from the mouth. Steps have been taken to prevent the spread of the disease.

Sale of Stamps to Raise Funds for Crusade Against Tuberculosis.—In Holland some new stamps have been placed on sale which cost one-half more than other stamps of the same denominations. The extra amount thus paid in is to be set aside by the government to be used exclusively for the crusade against tuberculosis, erection of sanatoria, fresh air colonies, etc. It is said that the public is cooperating well in purchasing these special stamps.

Plans for Public Baths in Villages.—A German society was organized some time ago to promote the movement for public baths in every community. It offered prizes for the best work suggesting plans for securing bathing facilities in country villages throughout the entire year. The seven best works out of the number received have been published with further suggestions from the officers of the society, and the whole question seems to have reached a practical solution in these plans. The *Allg. med. Ct.- Ztg.* remarks that they represent a notable advance in the progress of civilization. The pamphlet can be obtained from the central office of the society, Berlin NW, 6, Karlstrasse 19.

Medical Women in France and Germany.—Since 1899 women have been admitted to the German universities, but only in a few of the states do they have all the privileges of the men students. They now form 4 per cent. of the total number of medical students in Germany, that is, 300 out of the total of 7,219 medical students. In France 454 women are studying medicine. A large proportion of the women medical students in both France and Germany are foreigners, but there are now 50 duly registered medical women practicing in Germany and 27 in Hungary. An editorial in the *Deutsche med. Wochschr.*, No. 7, states that the opposition to the admission of women to the medical profession is gradually dying out, but that it behooves all who have the responsibility for the career of a young woman—parents, guardians and family physician—to deliberate well before deciding that the young woman in question is physically and intellectually equal to the severe demands of the long years in the university and professional school, and later for the struggle of establishing herself in professional life.

Society for Sanitary and Moral Prophylaxis in the Argentine Republic.—A society with this name has recently been organized with headquarters at Buenos Ayres. It is modeled on

the pioneer French society, organized mainly by Fournier's efforts. Fournier's pamphlet, "For Our Sons When They Get to be Eighteen," has been translated into Spanish and is to be distributed in large numbers to university students, factory employés and other young men. The society also is at work to organize day and evening dispensaries for free treatment of venereal diseases, in connection with each hospital. The society further, wishing to reduce the stigma associated with venereal disease in the lay mind, proposes to introduce a new term for it, similar to what has been done in France, where syphilis is now currently called "avariosis," and gonorrhea "neisserosis," and both are grouped as "avarie." The Argentine society suggests the term "avena" to designate the consequences of the venereal peril. E. R. Coni is the president of the new society and C. Lloveras, vice-president, with J. A. Muñiz as secretary—all names well known in international hygiene and sanitation. An antituberculosis society was organized in Argentina six years ago, and some of its achievements have been chronicled in these columns, among others the printing of advice in regard to tuberculosis on the boxes in which matches are sold at retail.

Report of the Medical School Inspectors of Berlin for 1905-6.—The *Deutsche med. Wochschr.* for February 21 comments on this recently published report that it shows that parents are taking more and more interest in the medical inspection of their children and are paying more heed to the advice on hygiene given at the same time. No attempt is made to examine repeatedly all the children, but only those who are suggested for the purpose by the school authorities. From 10 to 20 per cent. of the children come to school without a warm breakfast. The school inspectors remark that poverty was only exceptionally the cause of this, but generally neglect or temper. The fact that it is principally on Mondays that the children come breakfastless to school is significant. In from 6 to 40 per cent. the children do not have a separate bed, and in 6 per cent. more than 2 persons sleep in the bed. In some of the schools half the children had no tooth brush. Tickets were given to a hundred children with defective teeth, entitling them to free dentistry, but only 2 children applied. About 3 per cent. of all the children were found by the inspectors to be scrofulous, weakly, rachitic or tuberculous. Here, again, the inspectors say that ignorance and lack of conscientiousness are responsible for the poor health of the children rather than poverty. They advise provision for house-to-house inspection and education in hygiene to combat these conditions and the prevalence of vermin.

Death of Noted French Chemist, Henri Moissan.—Not long after his return from Stockholm, where he had been the recipient of the last Nobel prize for chemistry, Henri Moissan died February 21, aged 54. His fame began with research on biologic chemistry, and his isolation of fluorine and discovery of some of its combinations, a few of which are being used in therapeutics. He then perfected an electric furnace with which he produced temperatures of 3,500 C., and was able to distil gold, copper, iron, nickel, uranium and other metals and to make microscopic diamonds. This furnace is merely a block of lime containing in a central cavity the electrodes from a powerful dynamo and the objects to be heated. The mass of the sun is known to be composed of the metals which he was able to distil at this temperature, and he consequently believed that the surface of the sun must be at a lower temperature than that which he was able to induce in his furnace. Incidentally he noticed one day the formation in his furnace of a grayish substance which he recognized as calcium carbid and found that it produced a gas on contact with water, and this was the origin of the acetylene gas industry. He theorized that diamonds were the result of vaporization of carbon under immense pressure, and he realized these conditions by mixing carbon with iron, heating to 3,000 C. and then plunging the mass into ice water. The outer layer hardened while the inside was still molten, and as the metal within dilated as it cooled, the vaporized carbon inside was subjected to immense pressure, with the result that microscopic diamonds were found when the block was opened. Moissan was professor of pharmacy at Paris, and titular member of the French *Acaadémie de Médecine*, while he was honorary member of numerous scientific societies in this country and abroad. The fatal weakness of the heart, complicating appendicitis, is ascribed by his friends to inhalation of gases in working with his furnace.

Danish Law Aiming at Repression of Venereal Disease.—The full text of the law of March 6, 1906, which went into effect in Denmark last September, is published in the *Deutsche med. Wochschr.*, No. 8, on one of the advertising pages. It abolishes all reglementation of prostitutes, and applies to them the regulations in vogue against vagabondage in general. It is prohibited to maintain a brothel or to rent rooms to prostitutes under 18 or for assignation purposes under penalty of imprisoment, with a penitentiary term of two years in case of repetition of the offense. Strict penalties and liability for damages are also imposed for transmission of venereal disease when the other party is not aware of the danger of contagion. Physicians are required to make weekly reports of the number of patients with venereal disease in their care, and are enjoined to warn such patients of the dangers of transmission of the disease. Circulars for this purpose are supplied by the authorities. Provision is made for gratuitous treatment of venereal disease for every one, whether able to pay for it or not, and the provision is also made that a patient of this category, being treated in a hospital, must not leave the institution until he is dismissed by the physician. Disregard of this regulation carries a penalty of from 20 to 30 days' imprisonment. The police are empowered to forbid the proprietors of hotels, restaurants and saloons from employing women who have been previously sentenced on any of the above counts. It is further forbidden to give a syphilitic infant to another woman to nurse, and for a syphilitic wet nurse to take a healthy child to nurse. A child is regarded as suspicious of syphilis, even when presenting no signs of the disease, if either father or mother had contracted syphilis less than seven years before its birth, and when less than three months have elapsed since its birth. Arrangement is made for payment by the state or municipality of the physicians who make the examinations and treat the patients, either *per capita* or by an annual stipend, and these physicians are not allowed to ask or take any fee from the patients.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, March 12, 1907.

Quack Remedies in Great Britain.

There is no doubt that the British public is greatly addicted to the proprietary and "patent-medicine" habit and is peculiarly susceptible to the wiles of the medical quack. Such people flourish to an extraordinary degree in Great Britan at present, and their number is a remarkable tribute to the gullibility of the British public as well as an example of the manner in which proprietors of newspapers and magazines, for the sake of gain, will aid them in their predatory methods. A weekly paper named *Truth* is published in London, and one of its objects for many years has been exposure of frauds and swindles of every description. Medical quacks have fallen under the lash of the editors of this paper, which publishes at the end of each year what it terms a "cautionary list," containing the names and description of all the fakes which have come under its notice during the year. Of late this list has been of much interest to American readers. Since the operation of the law in the United States which forbids the use of the mail for carrying on a quack business in that country, a large number of quacks have flocked to Great Britain, where they can carry on their nefarious operations with impunity. Below will be found some of the names of Americans in Great Britain copied from *Truth's* "cautionary list:"

American College of Sciences, Rochester, New York: This institution sells a worthless course of instruction in personal magnetism and hypnotism, and together with the Yabe School and K. Leo Minges, mentioned below, is the enterprise of one F. D. Shoemaker, jeweler of 59 Page Street, Providence, R. I.

K. Leo Minges, Rochester, N. Y., and 7 Avenue de l'opera, Paris: Proprietor of a "cartilage" treatment which is guaranteed to add two or three inches to the height. It is undiluted humbug.

Liquozone: A nostrum widely advertised by a firm of American quacks, calling themselves the British Liquozone Company, as a cure for all germ diseases. It is nothing more than a weak solution of sulphurous acid, a drug which is likely to prove dangerous if administered by inexperienced hands. At an inquest in June, 1905, on two children who died after taking the stuff, the jury returned a verdict that they "died from exhaustion after vomiting and diarrhea set up by taking liquozone." It may also be stated that on several occasions the *Lancet* called attention to the worthlessness and dangerous properties of liquozone as a remedy.

Nutriola Company, Chicago, and 9-15 Oxford St., London: This is the enterprise of an American named Hanson, the "president" of the company. Not content with advertising its ability to cure everything, the company has also advertised purchase of its shares as the shortest way to wealth. A fraud order has been entered against the company by the United States Postoffice.

Viavi Company, British, Regent Street, W.: A quack establishment of American origin, dealing in remedies for female ailments. Women employés go about the country pretending to possess medical knowledge, delivering "health lectures" which they have mostly learned by heart, and persuading deluded women that they are in serious danger unless they take the viavi remedies, and submit themselves to the treatment of the viavi agents.

The five concerns in the following list have been officially declared to be carrying on a fraudulent business in the United States, and a "fraud order" has been entered against them:

Dr. Knapp Medical Company, Detroit; Falliopa Lynn Company, St. Louis; Institute of Physicians and Surgeons, Rochester, N. Y.; "Professor" R. E. Dutton, Lincoln, Neb.; "Professor" Thomas F. Adkin, Rochester, N. Y.

The above-mentioned are by no means all that are black-listed by *Truth*, but a sufficient number have been cited to demonstrate the fact that American quacks, like the wicked, "flourish as the green bay tree" in Great Britain.

Metric System for Great Britain.

A bill is to be brought into the British Parliament proposing that from April 1, 1910, all the present weights and measures used in Great Britain shall be replaced by those of the metric system. This bill will insure easy education in the new system by ordering local authorities to provide local standards at least twelve months before the act comes into operation.

National Physique and Anthropometry.

The government has been urged to establish a national anthropometric survey on the lines recommended by the interdepartmental Committee on Physical Deterioration in July, 1904. The machinery for such survey is ready, but a grant of from $20,000 to $25,000 from the government is necessary in order to put it into efficient action. The object is to get a continuous record of exact measurements of the physical and mental characters of the population and to note the environment in which the subjects of the measurements live. It is proposed to form a central department consisting of a director, two assistant directors, six surveyors and measures, and six statistical clerks. The surveyors would be sent to take measurements in about 100 different districts of the country, and would measure in each about 2,000 adults and 4,000 school children. A recent survey carried out in Scotland showed that in Glasgow hair and eye colors have changed so radically that the population of the town could no longer be considered to belong to the same race as the normal population of Scotland. The change is supposed to be due to the industrial environment in which Glasgow people live, which, to a large extent, has eliminated certain types of the population and completely changed its composition. Anthropometry has proved conclusively that in industrial environment people with fair hair and blue eyes—the Saxon type—die out and disappear, as they more easily fall victims to the diseases common in industrial areas and slums than do dark people. In rural districts, on the other hand, the fair man should be superior to the dark. The prime minister, Sir H. Campbell-Bannermann, promised that the request would receive the careful consideration of the government.

The Care of Children.

A sensation has been created by a series of articles contributed to the *Tribune*, the leading liberal paper, by Mr. G. R. Sims, the well-known writer, on the manner in which children are reared in the slums of London. Mr. Sims found that the saloons are invaded by women who bring babies and small children into the heated and poisonous atmosphere. The mothers not only drink cheap alcohol, vitiating their powers of suckling, but actually dose new-born infants and tiny children with gin and other alcoholic liquors, in order "to keep them quiet." As a result, the *Tribune* arranged a conference at its office, which was attended by leading authorities on children's diseases, philanthropists, bishops, Salvation Army officers, health officers and others. The government was represented by Dr. Macnamara, parliamentary secretary to the local government board. There was a general consensus of opinion that Mr. Sims' pictures were not in the least overdrawn. The following resolutions were carried: 1, No child under the age of 14 shall be allowed to enter any licensed house other than a residential hotel; 2, definite teaching in temperance should form part of the curriculum of public elementary schools; 3, that the conference resolve itself into a committee for supporting the previous resolutions as legislative measures.

VIENNA LETTER.

VIENNA, March 10, 1907.

nfant Life.

Correspondent.)

foot to amend the present regulations with regard to the care of destitute or neglected children, and a committee, including representatives of the local boards, of the boards of education and of several philanthropic organizations, has been asked by the government to draw up a bill to be presented to the new house of commons in May. The main object of the movement is to obtain legal control over persons keeping "baby farms," and to enable the local boards to remove infants kept by persons who are either unfit or incapable of taking care of babies, or from tenements which are unfit or unhealthy or otherwise unsuitable for living purposes. In addition, it is proposed to secure better protection for nursing mothers, especially under the form of continued sick pay, and the right to ask for a full month's pay in the case of a working woman giving birth to a living child. Legislation is at last compelled to take care of the youngest citizens, as the official statistics prove that the yearly loss of life due to neglect of infants amounts to about 50,000 for Austria alone. On the other hand, it has been shown what good results can be obtained by proper care, chiefly by education of the mother as to the rational feeding and by distribution of good milk for infants.

Prevalence of Influenza in Austria.

The unstable weather conditions throughout the central parts of Europe have had a very deleterious effect on the general health of the population, and influenza bacilli are often present in catarrhal affections of the upper air passages. A special feature of this year's epidemic, for so it must be termed, are the complications. Inflammation of the frontal sinus is present in nearly 35 per cent. of all cases, and acute otitis, mostly of the hemorrhagic type, has been reported to be very frequent, although the percentage of its occurrence could not be ascertained. A curious fact, not noticed or reported hitherto, is the liability of certain patients to be affected several times by influenza during the same epidemic, and each subsequent attack proves to be stronger than the preceding one. Perhaps the virus becomes more active by "passage." In such cases endocarditis and pleuritic effusions were noticed to be the rule at the third attack. The track of the disease is shown on the map to be exactly in accordance with the main directions of the cyclonic and barometric traces.

An Outbreak of Anthrax.

An outbreak of anthrax occurred quite recently in one of the hair factories here, and of the 6 cases affected, 4 proved rapidly fatal. Investigation showed that all 6 patients had been working in the same room, and the material used by them could be traced to a Russian bale of goods. Immediately work was suspended in the factory, and very exhaustive measures were adopted to have the premises and the goods disinfected thoroughly. At the same time the inspectors of the slaughtering houses were advised to keep up very strict supervision of their respective districts, with the result that a case of anthrax was found in a group of 27 cattle. The necessary measures were thereon instituted and the carcass of the animal burnt. As regards the treatment of the affected factory hands (4 male, 2 female), the first 4 patients were beyond any hope of recovery when brought to the hospital. The disease had not been recognized by the medical man in attendance; the other 2 patients were treated in time by excision simply, and they recovered. The necessity of international notification of similar outbreaks has now been proved *ad oculos*. In quiet times this would hardly have occurred, but the civil disturbances in Russia have brought it about that infectious material is exported.

Liquid Air as a Sensitizer for Finsen Phototherapy.

Privat Docent L. Freund reported to the Medical Society of Vienna on his experiments with liquid air which was used by him to shorten the time of exposure in Finsen phototherapy. He has found that the intense cold produced by the vaporization of liquid air is not only a powerful anesthetic for local purposes, producing profound anemia with subsequent hyperemia, but that it renders the tissues of the body exceptionally sensitive to the chemical effects of the electric light. The vicinity of the area to be treated is covered by a piece of wood, in which a hole has been bored corresponding to the diseased area. The liquid air is poured into this hole and the Finsen lamp is turned on for six minutes while the intense anemia lasts. Then the process is repeated, so that anemia is rapidly alternating with hyperemia, and the result thus obtained is much more satisfactory than by the usual method. As the tissues are sensitized, the action of the Finsen light is materially enhanced, and the same or better results can be obtained with the shorter exposures. He is now experimenting with liquid air as a sensitizer for the Roentgen rays. He announced that it is possible to induce at will, with the liquid air, erythema, excoriations and even ulcerations, according to the length of the contact, but that they all heal smoothly.

Pharmacology

LABORDINE.

A Report by the Council and Some Pertinent Comments Added Thereto.

The following report was submitted to the Council on Pharmacy and Chemistry by the subcommittee which examined Labordine:

To the Council on Pharmacy and Chemistry:—Your subcommittee presents the following report on Labordine, sold by the Labordine Pharmacal Co., St. Louis.

Labordine is advertised to physicians as having the following composition:

	Per cent.
Apium Graveolens (true active principle) "Process-Laborde"	35⅜
Gaultheria Fragrantissima (true active principle) "Process-Laborde"	25⅛
Acete Amide-Phenyle	15⅛
Quinina	1⅛
Benzoyl-Sulphyonic-Imide	23¼

It is stated to be a "vegetable antipyretic;" that it "reduces temperature without heart depression," and physicians are warned to "avoid acetanilid poisoning and danger from other coal-tar antipyretics."

While the "formula" and the statement just quoted are sufficient evidence of the fraudulent character of the product, yet an abstract of the reports of the chemists who analyzed it is given to further demonstrate its character.

Taking the average of the reports of analyses, Labordine contains:

	Per cent.
Acetanilid	37.9
Free salicylic acid	6.9
Quinin	present
Saccharin	not found
Corn starch	present
Milk sugar	34.7

The report of analysis only makes apparent that Labordine is not what it is claimed to be. While it is claimed to contain 23¼ per cent. saccharin, this substance was not present, or mere traces only. While, in a disguised way, it is stated to contain 15 1/8 per cent. acetanilid, it contained nearly 40 per cent.

It is recommended that Labordine be not approved and that this report be published.

The recommendation of the subcommittee was adopted by the Council, and in accordance therewith the above report is published. W. A. PUCKNER, Secretary.

COMMENTS.

A concrete illustration of some general principles previously laid down is furnished by a nostrum too unimportant to be of any value, save to "point a moral and adorn a tale."

About thirteen years ago Labordine was advertised under the name of Analgine-Labordine, "A purely vegetable product," "a combination of the active principles of *Camellia Thea*, *Apium Graveolens*, saccharin and carbohydrates," "Superior to Antipyrine, Phenacetine, Antifebrine, Acetanilid"—note the use of two names for the same thing—"or any of their imitations," and "unexcelled by any coal-tar product or their compounds." In 1894 the name was changed to Labordine, in order, as its owner stated, to prevent it being mistaken for a coal-tar product of similar name.

What its composition was at this time we do not know, since there is no guarantee of the permanence nor stability of nostrum formulas except "the honor and reputation of the manufacturers," which, as investigation has shown, is not always unimpeachable. There has been nothing to prevent alteration of the formula, if the proprietors desired, with every change of the moon. But the name and the general tone of the advertising has been the same. The claim of superiority over coal-tar products has been constantly made.

As to the present conditions, a circular enclosed with a sample of Labordine, recently sent from the St. Louis office, contains the formula given in the above report of the Council. In the same circular are also found these illuminating statements: "The medical profession has long appreciated the dangers involved in the administration of various mineral remedies now so commonly employed, and the value of a safe, effective and reliable vegetable antipyretic is universally recognized. Such a remedy is Labordine. It is purely vegetable in its composition and produces none of the evil after-effects of the coal-tar derivatives. . . . Labordine . . . is a purely vegetable cardiac stimulant. . . . There is nothing mysterious about Labordine or its constituents. . . . The 'Process Laborde' gives the true active principles of the Celery and Indian Wintergreen, something heretofore difficult to obtain. To this is added the fact that absolutely chemically pure Acet-Amide-Phenyle is used. The latter is the most valuable and, in fact, the only vegetable antipyretic known."

The above report of the Council shows the following facts:

1. *Apium Graveolens* (true active principle), "Process Laborde" is probably powdered celery seed. One chemist says: "The powder has the characteristic odor of celery, while a microscopic examination shows the presence of a substance having the characteristic structure of seeds in general." If celery seed has any "active principle" it has never been isolated. As to its therapeutic value, nothing whatever is known. It is, we understand, highly beneficial in the case of singing canaries, but authorities in scientific therapeutics have never discovered that it possessed any remarkable medicinal qualities.

2. *Gaultheria Fragrantissima* (true active principle), "Process Laborde," is probably ordinary every-day salicylic acid. One analysis showed salicylic acid to be present to the amount of about 7 per cent. The question of whether or not salicylic acid could in any way be considered the "true active principle" of *Gaultheria Fragrantissima*, was submitted to Prof. John Uri Lloyd of Cincinnati, the eminent authority on the chemistry of the proximate principles of plants, who replies:

> The advertisement is evidently so worded that, although the name of the Indian plant *Gaultheria Fragrantissima* is employed, its true and active principle being wintergreen oil, the concocter can mystify his patrons and at the same time use the well-known wintergreen oil, made in America, which in my opinion, so far as any chemical test might be concerned, could not be distinguished from the methyl salicylic acid (wintergreen oil) derived from the Indian plant. Concerning whether salicylic acid is a proximate constituent of *Gaultheria Fragrantissima*, in my opinion, it would be a misnomer to make such an announcement. Salicylic acid, *per se*, does not exist, in my opinion, in the plants mentioned, being made by chemistry.

3. The third and most important ingredient in this "purely vegetable antipyretic" is brazenly announced as "Acete-Amide-Phenyle," but it is only necessary to say that this imposing designation is an attempt to "Frenchify" a scientific name for acetanilid.

Analysis shows that this coal-tar product is present to the amount of 37.9 per cent., or 1.89 grs. in a 5-grain tablet.[1] In other words, this imposing Labordine, made by a mysterious and elsewhere unheard of "Process Laborde," is simply one more of the herd of acetanilid powders that have been foisted on our profession and that have filled our journals for years past. The only thing in it that is of practical therapeutic value is 2 grains of acetanilid to a 5-grain tablet. The statement that Labordine is a purely vegetable preparation is probably intended by the proprietors as a good joke on the medical profession. Acetanilid is not usually regarded as a vegetable product, at least it is not ordinarily found in market gardens. The only vegetable source from which acetanilid can be obtained is the beautiful flowering coal-tar bush, from which so many other nostrum vendors obtain their "perfectly harmless, purely vegetable antipyretics," all composed of acetanilid and something to hide it." If the statements made by one of the company's employés and quoted below are true, Labordine is not "manufactured and made chemically pure in the laboratories of the Labordine Pharmacal Company," and this company has no laboratory, as its product is manufactured for it.

4. Our readers will be interested to know that the important ingredient entered under the imposing name of Benzoyl-Sulphyonic-Imide is simply a highly scientific name for saccharin. Even on this point, however, the formula is misleading, since it claims 23¼ per cent. of this substance, whereas the analysis shows that the presence of saccharin could not be proved. If it is present at all it is in quantities much less than stated, and so small as to be difficult of recognition. Instead it appears that the product contains common starch and about 35 per cent. of milk sugar.

---

1. Since this article was prepared we find that the national Food and Drugs Act has forced the proprietors of Labordine to put on the label the amount of acetanilid it contains, viz., 40 per cent., or 2 grains in a 5 grain tablet.

THE COMPANY ITSELF.

One of the humiliating phases of the proprietary medicine business is that, in many instances, these preparations are foisted on our profession by men who know nothing of medicine, pharmacy or chemistry, yet not only presume to concoct our medicines for us, but also assume to instruct us how to use them.

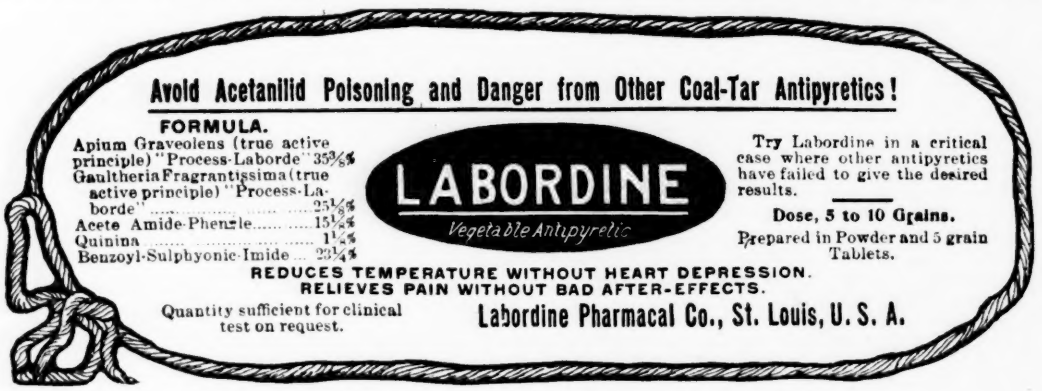
Gould's Commercial Register for 1907 gives the officers of the Labordine Pharmacal Company as H. M. Coudrey, president; M. Crawley, vice-president, and D. E. Gamble, Jr., secretary and treasurer. The place of business is given as 420 Market Street, St. Louis. We are informed that Harry M. Coudrey is an insurance agent and the present member of Congress from the Twelfth Missouri District; that Mark Crawley is a clerk in the insurance office of H. M. Coudrey; and that Mr. Gamble is cashier in the same office. A recent visit of a representative of THE JOURNAL to 420 Market Street, St. Louis, showed that the office of the Labordine Pharmacal Company is in Room 12 on the third floor of an old dilapidated building. There was no sign on the door of the office, but on the wall next to an old elevator was a very small sign which read "Labordine Chemical Company, Room 12." The office at the time of the visit was apparently in charge of a young woman about 20 years old. Careful scrutiny of the furniture and fixtures showed that the room contained an old oak roll-top desk in one corner and a kitchen table, on which were piled about half a dozen packages of Labordine. The floor of the room was bare and very dirty. In an adjoining room, the door of which was open, was piled a lot of broken furniture. No laboratories nor chemical apparatus were visible. The young woman in charge stated that Labordine was made by the Mallinckrodt Chemical Works, at No. 3600 North Second Street, St. Louis.

This is a fair sample of the nostrums and of the methods of exploiting them. The bitterly humiliating fact about the whole business is that a preparation, advertised under such palpably misleading claims, could actually be advertised in medical journals, even in journals of a supposedly high scientific standard, and could be bought and prescribed for years by supposedly intelligent and conscientious physicians. It is not supposed that every physician should be enough of a chemist to detect the ridiculous discrepancies between the published formula and the therapeutic claims made for such mixtures. But that members of a supposedly learned profession should fail to have enough interest in the preparations they prescribe for their confiding patients to find out that acetanilid is being masked under an obsolete and little used name, that only saccharin is hidden under an imposing polysyllabic designation; that the so-called "active principle Process Laborde" (whatever that may be), is only equivalent to 1/3 grain of salicylic acid in a 5-grain tablet, and that the advertising matter sent out for years by this company contained absolute falsehoods regarding the composition and therapeutic benefits of its preparation, is certainly just cause for shame and humilation. If a physician, knowing the composition of Labordine, wishes to prescribe it and prescribes it intelligently, he has a perfect right to do so. If he wishes his patient to have 2 grains of acetanilid, 1/20 of a grain of quinin, and 1/3 of a grain of salicylic acid, and considers a mixture of ground celery seed, starch and milk sugar as a proper vehicle for this medication, no one will question his right to administer it. No physician, however, has any right, either moral or professional, to prescribe a preparation, concerning the ingredients of which he knows absolutely nothing.

Is it possible that such carelessness may be one of the causes of waning public confidence in our profession? We leave it to our readers to determine whether such a moral can be drawn from this typical nostrum story.

Patented Remedies and Their Substitutes.

The *Pharmazeutische Zeitung*, Oct. 13, 1906, discusses the objections made by the Swiss Apothecary Association to the patenting of medicinal preparations which it considers of importance as affecting not only Switzerland and the chemical industry in that country, but the manufacture of medicinal chemicals in other countries as well. The objections made are chiefly two: The enhanced price which accompanies patented articles and the difficulty of control of their identity and purity and of comparison with their unpatented substitutes.


Avoid Acetanilid Poisoning and Danger from Other Coal-Tar Antipyretics!
FORMULA.
Apium Graveolens (true active principle) "Process-Laborde" 35⅜%
Gaultheria Fragrantissima (true active principle) "Process-Laborde" 25⅛%
Acete Amide-Phenzle 15⅛%
Quinina 1¼%
Benzoyl-Sulphyonic-Imide 23¾%
LABORDINE
Vegetable Antipyretic
Try Labordine in a critical case where other antipyretics have failed to give the desired results.
Dose, 5 to 10 Grains.
Prepared in Powder and 5 grain Tablets.
REDUCES TEMPERATURE WITHOUT HEART DEPRESSION.
RELIEVES PAIN WITHOUT BAD AFTER-EFFECTS.
Quantity sufficient for clinical test on request.
Labordine Pharmacal Co., St. Louis, U. S. A.

This advertisement is reproduced from the *Therapeutic Gazette* of November. For brazen effrontery and shameless mendacity the caution "AVOID ACETANILID POISONING AND DANGER FROM OTHER COAL-TAR ANTIPYRETICS" is hard to beat, when the stuff contains nearly 40 per cent. of acetanilid. And yet this is but a fair sample of nostrum advertising that intelligent physicians tolerate in medical journals they help to support. For how much longer ? ? ?

The pharmacopeias have done little to provide reliable and standard methods of testing these preparations. Only three patented or trademarked preparations have been received into the new edition of the German pharmacopeia and the supplement gives the pharmacist little help in his endeavor to test these preparations for himself. On the other hand, the Swiss pharmacopeia commission has gone to the extent of preparing tests for a large number of remedies protected by patent or trademark by which they may be compared with their substitutes which are found in the market. Dr. J. Thomann has made comparative tests of a number of these preparations, using the commission's methods, and finds that in a considerable number of cases the substitute found in the market equals or excels in purity the original patented preparation. The comparison of tannigen and diacetylated tannin revealed differences in the melting point (which is not constant); in other respects the substitute appeared to be fully equal to the original. The same was true of thiocol and potassium ortho-guaiacol-sulphonate and of salophen and its substitute acetamido-salol. In regard to protargol a marked difference was found between different samples of silver proteid offered as substitute. Two samples showed substantially the same proportion of silver as protargol (8 per cent.), while others fell as low as from 3.8 to 4 per cent. In one substitute for xeroform, free tribromphenol was detected.

The testing of tannalbin by digestion with pepsin showed that the kind of pepsin used made an essential difference in the result, indicating the necessity of careful specification of the

processes prescribed for these tests. Thomann suggests a standing committee whose function shall be to devise and publish methods for testing new preparations during the intervals of the editions of the pharmacopeia.

Another Death from Mrs. Winslow's Soothing Syrup.

Dr. John M. Edwards, Commissioner of Health, Mankato, Minn., reports the death of Mary Veigel, aged 18 months, from an overdose of Mrs. Winslow's soothing syrup. He writes:

"The undertaker came to my office for a burial permit for a child who had died, the parents said, of measles. The undertaker called my attention to the fact that the parents made a request for a burial permit worded that way. The coroner was called and asked me to assist him in making an investigation. The child had been the youngest of a family of five, all of whom had measles. The child had been doing very well, so its mother said, until twelve hours before its death, when it became peevish and cross. At 8 a. m. she gave the child the first dose of Mrs. Winslow's Soothing Syrup. The child being fussy and fretful, the mother continued to give her this medicine until she had taken about half the contents of the bottle. About 2 or 3 o'clock in the afternoon the child died. I put down the chief cause of death as poisoning from Mrs. Winslow's Soothing Syrup, and the contributing cause as measles. As the child had been sick, her system was more or less undermined, and she fell an easy prey to the medicine.

"I submitted the remaining part of the bottle which I took from the house to the laboratory of the State Board of Health, at St. Paul, and I have on file in my office the analysis of the contents in which the chemist found morphin."

Support the Association.

Under this head the *California State Journal of Medicine* makes the following appreciated comment: "Doubtless but few realize as yet the tremendously valuable work which is being done for the medical profession of this country by the American Medical Association, through its Council on Pharmacy and Chemistry. The work of the Council is entirely a labor of love. The Councilors receive no compensation, we believe, for the work which they are doing for us, and the actual expenses of doing the work, which are borne by the Association, must be very great. Shall all this work and this expense be thrown away? That is a question which the medical profession of the country must decide; it is up to you, individually, as much as to anyone else. Will you follow the work of the Council, recognize the frauds it discloses and bear them in mind; will you refuse to use or recommend any of the extra-pharmacopeial preparations presented to you, unless they have passed the close scrutiny of the Council and received its approval? That, it would seem, is about the least that you, as a self-respecting physician, can do in justice to yourself and your patient. Any remedial preparation that you do not find in the list of 'New and Non-Official Remedies,' as issued by the Council, is one to look on with suspicion; it may be a good and legitimate product, but the chances are that it is not, or that the proprietors have uttered exaggerated statements as to its value. The *Journal* will print, every month, a list of all preparations approved by the Council. Look for it, study it, keep it handy for reference."

An Eclectic's Attitude Toward Proprietaries.—Dr. C. E. Frazier, Weatherford, Texas, writing in the *Eclectic Medical Journal*, March, 1907, has this to say about proprietaries:

"Every mail brings samples, samples, samples, and advertising literature until you can not rest, and I have often thought: 'What does all this mean?' 'From where does all the money come to keep up all this large amount of expensive advertising?' 'Are the physicians over the country patronizing them?' And I have been sad in my soul to admit that they were; and as I have watched this process evolve and develop, my sadness has turned to disgust, and disgust to vexation, as I have seen my fellow practitioner (to use a common term) 'worked.' To illustrate, Marchand's peroxid of hydrogen was at first advertised and sampled only to physicians; then, when the manufacturers got a few indorsements from prominent physicians (that seemed all they wanted), they then threw their preparation wide open to the public; the lay press is full of advertisements of Marchand's peroxid; everybody knows all about peroxid of hydrogen; and this same thing is true, in a measure, of antikamnia, glycothymoline, listerine, antiphlogistine, and many others. Some of them have not come out quite so strong as Marchand, but their product is not quite so well known to the public, and I am convinced that all they are waiting for is a little more (ethical) advertising, and then they will all come out."

Importation of French Proprietaries into Russia.

According to *Progrès Médical*, Feb. 23, 1907, an arrangement has been entered into by which the Russian government will accept the reports of analyses of French proprietaries made by certain laboratories which are to be designated by the French government. The laboratories act in this case without any official character and they are not called on to give an opinion as to the quality of the medicines, but simply to state the composition. The analyses made are for the purpose of satisfying the requirements of the Russian administration and can not be invoked in France in opposition to legislation applicable to the case.

A Sensible View of Medical Etiquette.—Medical ethics, according to the London *Spectator*, instead of being kept up, as people so often imagine, in the interests of physicians, are really maintained in the interests of the public. It is the public, not the doctors, who would suffer most, were medical ethics entirely done away.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, April 1. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 1-2. Secretary, Dr. Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, April 2 Secretary, Dr. S. D. Van Meter, 1723 Tremont St., Denver.

IDAHO State Board of Medical Examiners, Boise, April 2. Secretary, Dr. J. L. Conant, Jr., Genesee.

MINNESOTA State Board of Medical Examiners, the Old Capitol, St. Paul, April 2. Secretary, Dr. W. S. Fullerton, St. Paul.

MONTANA State Board of Medical Examiners, the Capitol, Helena, April 2. Secretary, Dr. W. C. Riddell, Helena.

GEORGIA ECLECTIC Board of Medical Examiners, Senate Chamber, State Capitol, Atlanta, first week in April. Secretary, Dr. L. F. Bugg, Madison.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, April 30-May 1. Secretary, Dr. E. R. Anthony, Griffin.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, April 2-4. Secretary, Dr. H. M Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, State House, Providence, April 4. Secretary, Dr. Gardner T. Swarts, Providence.

ARKANSAS State Medical Board, Little Rock, April 9. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Medical Board, Little Rock, April 9. Secretary, Dr. V. H. Hallman, Hot Springs.

WEST VIRGINIA State Board of Health., Wheeling, April 9-11. Secretary, Dr. H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, April 12. Secretary, Dr. Geo. C. Ober, Washington.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 16. Secretary, Dr. Chas. L. Tisdale, San Francisco, Cal.

MISSOURI State Board of Health, St. Louis and Kansas City, April 16-18. Secretary, Dr. J. A. B. Adcock, Warrensburg.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, April 17-19. Secretary, Dr. J. A. Egan, Springfield.

KENTUCKY State Board of Health, City Hall, Louisville, April 23, Secretary, Dr. J. N. McCormack, Bowling Green.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

Reciprocity Convention.—The American Confederation of Reciprocating, Examining and Licensing Medical Boards will hold its next annual session in Chicago, Tuesday, April 30, 1907.

Arkansas October (1906) Report.—From correspondence with Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, we learn that the failure charged against the Southwestern University Medical College, Dallas, Texas, in the report published in THE JOURNAL, Jan.

5, 1907, page 75, was made by an undergraduate and, therefore, the college is not to be held responsible.

Drake University Adopts Higher Entrance Requirements.—By a resolution adopted by the faculty, March 11, 1907, the Medical Department of Drake University at Des Moines, Iowa, commencing with the college year 1910, will require in addition to a four-year high school education, two years of work in a college of liberal arts as a prerequisite to the study of medicine. There are now 41 medical schools which by 1910 will require one or more years of work in a college of liberal arts as a prerequisite to medical study.

Establishment of Course in Pharmacy in University of Minnesota.—One reason for the dependence of physicians on proprietary ready made mixtures is because of their lack of familiarity with materia medica and pharmacy. It is conceded by all that this lack of knowledge is because of poor instruction in schools of medicine, along these lines, especially as regards courses in pharmacy, including the writing of prescriptions, the proper combination of drugs, their incompatibilities and doses. Instruction in medical schools is insufficient because, as a rule, these courses are given by physicians who are not sufficiently familiar with the subject, or else they are given by pharmacists who are not teachers. It is, therefore, gratifying to note that the regents of the University of Minnesota have appointed the dean of the School of Pharmacy to give a course of instruction in the College of Medicine and Surgery. Professor Wulling is well known as a competent pharmacist and as an efficient and enthusiastic instructor. His appointment, therefore, can only be to the best interests of medical education.

Michigan Reciprocity Report.—Dr. B. D. Harison, secretary of the Michigan Board of Registration in Medicine, sends us a list of physicians licensed through reciprocity during the year 1906. The following colleges are represented:

REGISTERED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago, (1900), (1901), (1902), (2, 1904), (3, 1905),	(2, 1906)	Illinois
Northwestern University	(1900), (2, 1902), (2, 1906)	Illinois
Illinois; (1897), with Wisconsin	(1903)	Iowa
Rush Med. Coll., (1901), (2, 1904), (1905) with Bennett Coll. of Ecl. Med. and Surg.	(1901)	Illinois
Hahnemann Med. Coll., Chicago	(1901), (1905), (4, 1906), with Illinois	(1888) Iowa
Chicago Med. Coll.	(1890)	Illinois
Chicago Homeo. Med. Coll	(1901)	Ohio
Hering Med. Coll.	(1899), with Indiana; (1904)	Kansas
Indiana Med. Coll.	(1906)	Indiana
Ft. Wayne Coll. of Med.	(1905)	Indiana
Drake University, Des Moines	(1894)	Iowa
University of Iowa	(1883)	Iowa
Hospital Coll. of Med., Louisville	(1889), (1892)	Missouri
University of Maryland	(1902)	Maryland
Baltimore Med. Coll.	(1905)	Maryland
College of P. and S., Baltimore, (1902), (1897, with Iowa; (1895), with Ohio	(1891)	Wisconsin
University of Michigan, Coll. of Med.	(1890)	Montana
University of Michigan, Homeo. Dept.	(1902)	Indiana
Michigan Coll. of Med. and Surg.	(1897)	Wisconsin
St. Louis Coll. of P. and S.	(1891)	Missouri
University of Nebraska	(1904)	Nebraska
College of P. and S., New York	(1899)	New York
Cleveland Homeo. Med. Coll.	(1905)	New York
Jefferson Med. Coll.	(1900)	Ohio
Hahnemann Med. Coll., Philadelphia	(1906)	Maryland
Laval University, Montreal, Que.	(1894)	Maine
McGill University, Montreal, Que.	(1875)	Minnesota
Western University, London, Ont.	(1906)	Wisconsin
Toronto University, Ontario	(1904)	Wisconsin
Royal Imperial University, Vienna	(1885)	Indiana
University of Maximillian, Germany	(1873)	Missouri
Heidelberg University, Germany	(1902)	Iowa

Marriages

FREDERICK HOLME WIGGIN, M.D., New York City, to Miss Christina Ferguson Orr of Litchfield, Conn., March 14.

HOMER CUTLER CROWELL, M.D., Kansas City, Mo., to Miss Sarah Estelle Bean, at New York City, March 16.

ANNA BARTSCH, M.D., Washington, D. C., and HAROLD EDMUND DUNNE, M.D., of Ridgway, Pa., March 5.

WILLIAM GARR SHADRACH, M.D., Albuquerque, N. M., to Miss Mary E. Smith of Glasgow, Mo., March 7.

WILLIAM FRANCIS MITCHELL, M.D., to Miss Frances Shull, both of Lancaster, Mo., March 12.

WILLIAM M. WALLIS, M.D., St. Joseph, Mo., to Miss Nettie Douglas, at Kansas City, recently.

G. W. WALKER, M.D., Hyattville, Wyo., to Mrs. Blanche M. Bell, at Sheridan, Wyo., recently.

OLIVER W. BOATMAN, M.D., to Miss Elizabeth Mercer, both of Burlington, Iowa, March 12.

Deaths

William J. Wakeman, M.D. U. S. Army, Yale University, Medical Department, New Haven, Conn., 1879; who was appointed assistant surgeon, with the rank of first lieutenant, May 23, 1882; was advanced to the grade of captain five years later, and promoted to the grade of major and surgeon, Feb. 21, 1900; who served as major and brigade surgeon of volunteers during the Spanish-American War, and had recently been stationed at Fort Thomas, Ky., died at Fort Monroe, Va., March 20, from obstructive jaundice, aged 52.

Leander P. Jones, M.D. New York Homeopathic Medical College and Hospital, New York City, 1874; of Greenwich, Conn.; a member of the American Medical Association; state senator in 1894; warden of the borough, chairman of the school committee and town health officer; who was mainly instrumental in the establishment of the Greenwich General Hospital; for many years fleet surgeon of the Indian Harbor Yacht Club, died at Bellaire, Fla., March 18, from kidney disease, after a long illness, aged 61.

James Utley, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1874; a member of the surgical staff of Newton (Mass.) Hospital for 13 years, and one of the best known physicians of eastern Massachusetts; for many years physician at the Middlesex County jail, East Cambridge, died at his home in Newton, March 15, from disease of the stomach, after a prolonged illness, aged 68.

Rodney C. F. Combes, M.D. Bellevue Hospital Medical College, New York City, 1875; a member of the state and county medical societies, the Long Island Medical Society and the Brooklyn Neurological Society, of which he was once president, died at his home in Brooklyn, March 18, from typhoid fever contracted during a recent trip to Mexico, aged 59.

William Henry Donnelly, M.D. Baltimore Medical College, 1905; assistant house physician on the Boston Floating Hospital in 1905; and later house physician at the House of Providence Hospital, Holyoke, Mass., died at the home of his mother in Worcester, Mass., February 9, from brain tumor, after an illness of three weeks, aged 27.

Joseph Hanson Hare, M.D. Medical Department of the University of Nashville (Tenn.) 1889; for many years president of the board of health of Bluefield, W. Va., died from hypostatic pneumonia, February 22, at his home, after an illness of about two years with obscure nervous disease, aged 51.

Thomas Benjamin Noble, M.D. Medical College of Ohio, Medical Department of the University of Cincinnati, 1851; one of the oldest and most beloved practitioners of Johnson County, Ind., died at his home in Greenwood, March 8, from arteriosclerosis, after an illness of two months, aged 80.

Jennings P. Crawford, M.D. University of Iowa College of Medicine, Iowa City, 1883; a member of the American Medical Association; district surgeon for the Chicago, Milwaukee & St. Paul Railway at Davenport, Iowa, died at his home in that city, March 24, from arteriosclerosis, aged 51.

James B. Murfree, Jr., M.D. Vanderbilt University, Medical Department, Nashville, 1893; a member of the American Medical Association, city physician of Murfreesboro, Tenn., and a prominent practitioner of that city, died at his home, March 15, after an illness of two days, aged 37.

Herbert A. Barney, M.D. Long Island College Hospital, Brooklyn, 1888; a member of the American Medical Association; supervisor of the town of Belmont, and coroner and jail physician of Allegany County, N. Y., died suddenly at his home, March 16, from quinsy, aged 42.

John B. McDowell, M.D. Medical Department of Kemper College, St. Louis, 1845; Missouri Medical College, St. Louis, 1859; a veteran of the Mexican War, died at his home in Mason City, Ill., March 16, from cerebral hemorrhage, after an illness of one day, aged 89.

Albert M. Warner, M.D. Vermont Medical College, Woodstock, 1842; said to have been the oldest practitioner of Waukesha, Wis.; county physician of Waukesha County for several years, died at the home of his adopted daughter in Chicago, March 15, aged 91.

John George Reinberg, M.D. The Netherlands University of Utrecht, Holland, 1871; a member of the American Medical Association, died at his home in McBain, Mich., February 22, from pneumonia complicating typhoid fever, after an illness of two weeks, aged 62.

James M. McClanahan, M.D. Medical College of the State of South Carolina, Charleston, 1868; one of the oldest practitioners of Oconee County, S. C., died March 14, from an accidental fall from the second story of his barn at Petreat, aged 78.

Oscar Robert Bluthardt, M.D. Rush Medical College, Chicago, 1886; assistant physician at the Coook County Institutions, Dunning, died at his home in Chicago, March 12, from cerebral hemorrhage, after an illness of four weeks, aged 54.

Iral L. Brown, M.D. Central College of Physicians and Surgeons, Indianapolis, 1878; one of the oldest practitioners of Montgomery County, Ind., died at his home in Alamo, March 18, from cerebral hemorrhage, aged 80.

James B. McGrew, M.D. College of Physicians and Surgeons, Baltimore, 1883; formerly a practitioner of Pittsburg, Pa., died at the home of his brother in Finleyville, Pa., March 16, after a prolonged illness, aged 52.

Charles Mervin Fenn, M.D. University of California, Medical Department, Toland Medical College, San Francisco, 1865; died at his home in San Diego, Cal., from chronic nephritis, March 7, aged 71.

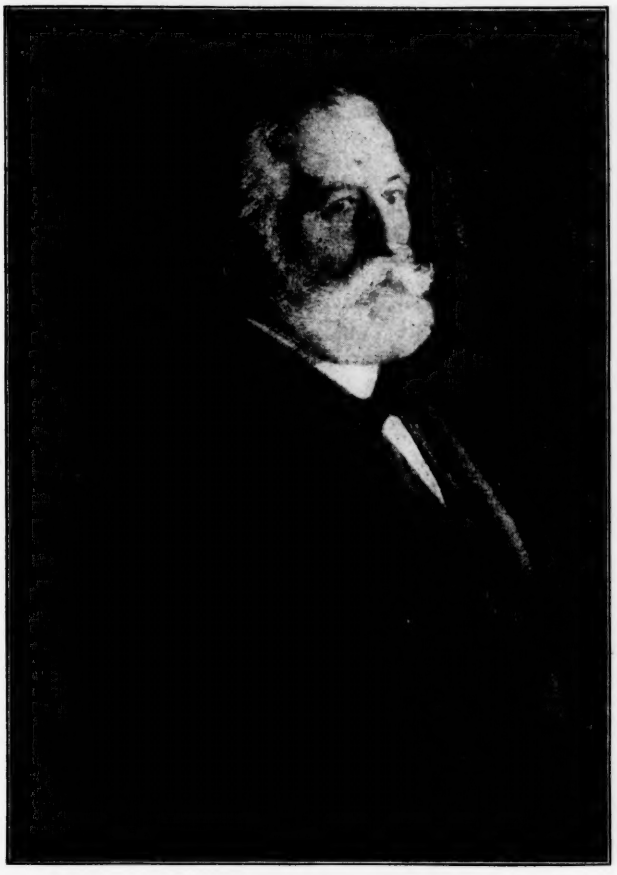
James Harper North, M.D. Pennsylvania Medical College, Gettysburg, 1857; the oldest memb of the staff of Clifton Springs (N. Y.) Sanitarium, died at the sanitarium March 12, aged 83,

William A. Harris, M.D. Chicago Physio-Medical College, 1889; died at his home in Mone , Ill., from pneumonia complicating typhoid fever, March 6, after an illness of 10 days, aged 62.

Perie Comerford, M.D. Northwestern University Medical School, Chicago, 1903; died at his home in Appleton, Wis., March 9, from nephritis, after an illness of two years, aged 26.

Philip Barbour Pendleton, M.D. Jefferson Medical College, Philadelphia, 1845; died at his home in Cuckoo, Va., March 16, from paralysis, after an illness of several weeks, aged 89.

Joseph Henry Sweeney, M.D. Jefferson Medical College, Philadelphia, 1894; died at his home in Lehr, N. D., February 8, from pneumonia, complicating acute nephritis, aged 35.



ERNST VON BERGMANN.

Henry H. McDonough, M.D. Cleveland Medical College, 1876; for a number of years postmaster at Vanceville, died at his home in Claysville, Pa., March 16, from cardiac dropsy, aged 71.

James H. Anderson, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1848; died at his home in Easton, Md., March 11, from heart disease, aged 80.

Alois F. Hinz, M.D. University of Nebraska, College of Medicine, Regular Department, Lincoln, 1886, died suddenly at his home in Minneapolis, Minn., February 28.

Daniel M. Foster, M.D. Louisville (Ky.) Medical College, 1841; a pioneer resident of Bloomington, Ill., died at his home in that city, March 17, aged 90.

Deaths Abroad.

Ernst von Bergmann, the eminent surgeon and leader of the medical profession in Germany, died at Wiesbaden, March 25, after an operation for appendicitis, aged 70. His seventieth birthday was celebrated Dec. 16, 1906, with great enthusiasm. He was born in Riga, Russia, and his brother is still a practitioner at Riga, while a nephew is a surgeon of Irkutsk, Siberia. He became prominent by his revolutionary ideas in regard to military surgery as he served in the Franco-Prussian and Turko-Russian campaigns, and was the first to advocate the rational or conservative treatment of wounds in war. After serving as professor of surgery at Dorpat and Würzburg, he was called to Berlin in 1882 as successor to von Langenbeck in the chair of surgery, and he also assumed the editorship of the *Archiv f. klinische Chirurgie*, founded by von Langenbeck. Volume lxxxi of the *Archiv*, just published, is dedicated to von Bergmann. The first part is from his friends and colleagues, the second part from his present and former assistants. Some of the articles in it are devoted to the subject of brain surgery, in which von Bergmann was the authority in Germany. Fischer ascribes his meteoric rise to prominence as due to his vast and successful literary work, commencing with his publications on the causes of sepsis and its control by means of ferments, in which he experimented among others with trypsin. In the course of this research he became infected and was critically ill with lymphangitis for a time. His tireless efforts to promote the welfare of the profession in every respect were gratefully lauded in the recent birthday speeches, to which von Bergmann replied that he deserved no credit for what he had done—he had not been one of the pushers, but only one of the pushed—it was the greatness of the times that had lifted him into prominence. He was very affable and yet dignified, liberal, hospitable and careful to observe all the niceties of professional etiquette. He had the largest clientele among crowned heads of any man in Europe, and had been heaped with honors of all kinds, including a life membership in the senate.

The present stage of organization of the profession in Germany is largely the result of his disinterested labors for all the material interests of the profession. In 1897 he summoned physicians and laymen to concerted action to secure proper provision for first aid in emergencies in Berlin, with most successful results. He preached and worked for professional unity and organization, attending nearly all the meetings of the local medical chamber, of which he was president, and guiding its deliberations for years. The new system of free postgraduate lectures now in operation throughout Germany, with courses in 38 cities, and with its new central building, the Kaiserin Friedrich-Haus at Berlin, where the museum, the offices and the "flying exhibitions" are installed, is a grand monument to his memory, as the inception and success of the whole scheme are largely attributed to his influence on the press, in the legislature and with persons of authority. He was president of the whole system, and cooperated in the publication of its official organ, the *Zeitschr. f. aerztliche Fortbildung*. He was also with König and Richter, the publishers of the *Centrbl. f. Chirurgie*.

M. Duval, M.D., professor of histology at Paris, and author of several works on anthropology, embryology and histology, including a manual of anatomy for the use of artists, died March 7, aged 63.

O. Israel, M.D., professor of pathologic anatomy at Berlin and formerly assistant to Virchow, died recently, aged 53. Since Virchow's death he has been editor of Virchow's *Archiv*, which was continued by Orth, Virchow's successor in the medical faculty. Israel has published a number of works on congenital anomalies, circulatory affections, infectious diseases, cancer and the like.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

Graduate Work in County Societies.

The following letter has been received from Dr. W. C. Gates, Bucyrus, Ohio:

"For many years I have felt the need of systematic postgraduate medical study and I know that very many of my professional brethren feel the same need. The county society, while valuable, is far from working at its greatest efficiency. For several years I have been trying to think of some plan to reach the individual physician working alone, as well as those in a position to work in the local society.

"I think that the American Medical Association ought to take up some method of reaching and helping its members and others in postgraduate study at home. It has a building, printing plant and office force, and is well equipped for the work, and can do it cheaper and more efficiently than others. Again, this work naturally falls to the Association. It will need but a few more good men to carry out whatever plan is adopted.

"Many of our universities are giving extension courses of study by correspondence, with credit and satisfaction. While a correspondence school of medicine would be ridiculous, I think that a correspondence course of postgraduate study, conducted by the American Medical Association, would be practical, popular, and most serviceable to the general practitioner.

"With good men at headquarters, outline courses of study could be prepared in pamphlet form on each of the various subjects of medicine and surgery. A graduate student (country physician or other) could send in for the pamphlet outline on any given disease in which he was most interested at the time, the instructors could answer his questions and give him the benefit of all that is valuable in the new books and journals on the subject in which he was interested. If the physician chose to take an examination in the subject, after a proper amount of study, he could receive credit, and a certain amount of credits would entitle him to a certificate in the graduate work.

"Again, this idea ought to be modified for use through the county society. It would make the societies much more efficient and attractive, and would open up a wealth of material to its members and to the individual physician, which is at present inaccessible to them. It would bring to the Association reports of interesting cases which at present never find their way into print. This idea is practical, and can be worked out so as to be most efficient to the Association and of great lasting benefit to the individual professional worker."

Dr. Gates has outlined substantially the same plan that has been under consideration for several years past, but which has not been put into operation for various reasons. The advantages of such a plan are unquestionable. It is also probably true that something along this line will be inaugurated just as soon as there is a sufficiently wide interest taken to justify such a measure.

The Courtesies of Correspondence.

Physicians as a class have at various times been accused of many shortcomings and delinquencies. Their sins of omission and commission have varied in enormity with the imagination of the accuser from blatant atheism to simple discourtesy. Like all sweeping generalities such charges are largely without basis. No set of men—no profession—has a monopoly either of vice or of virtue. It is admitted that physicians, being human, are liable to err, and that their lives being full ones, such errors are apt to be those of omission. We were not surprised, therefore, when we received recently a letter from a physician in which he complains in strong language of the lack of courtesy among physicians as evidenced in correspondence. The particular shortcoming in this case was the failure of many physicians, who had written for information, to enclose a stamp for reply. While every thinking man knows that when writing a business letter that calls for a reply in which he alone is interested, it is but simple courtesy to enclose a stamp, yet it is surprising how few men, either in or out of the profession, live up to this axiom of business correspondence. And yet if faults are ever to be condoned, and if shortcomings are ever to be excused, we believe the case in point is one that calls for leniency of judgment.

The medical man in this country, thanks largely to the enterprise of the manufacturer of proprietary medicines, is simply deluged with mail of greater or less importance and value—usually less. Every nostrum vendor in the country seems to make it his duty to pour on the unoffending physician a cataract of form-letters and literature. No small proportion of these letters request that the "Dear Doctor" write and relate his experience with this or that "proprietary"—but the infrequency with which such firms enclose stamps for replies is probably an indication of the number of answers they expect. It is not altogether to be wondered at, then, that the physician's feelings along this line become a little blunted. So that while we believe with our correspondent that as "members of a learned profession we should observe those little courtesies which are an index of intelligence and character," we would call attention to the reverse of the shield.

A Summary of the Insurance Fee Question.

At the quarterly meeting of the South Idaho District Medical Society, held at Weiser on January 15, Dr. Jesse C. Woodward of Payette read a paper on life insurance examination fees, giving a comprehensive summary of the life insurance situation, as well as the methods used in his district for obtaining an expression of opinion and concerted action from the medical profession. Dr. Woodward discussed the entire question at length, and closed his paper with this summary:

1. In a controversy over fees, the examiner and not the company should determine the amount to be paid.
2. The statement of the companies that the reduction in fees is due to legislation is false.
3. It is not true that the companies are not able to pay a flat fee of $5.
4. It is impossible for an individual to combat immense, splendidly organized concretions of capital.
5. The graded fee schedule, so-called, is a delusion and a snare.
6. Whatever the fee, an honest examination should be given.

The companies will enforce their demands by:

7. The discharge of the present examiners who refuse to make examinations for $3 or less.
8. The appointment of other and cheaper examiners.
9. The importation of permanent competing physicians.
10. The temporary introduction of physicians to do the examining, or by the exportation of the applicant.
11. The employment of an examiner at a stated salary to do all the examining within a given area.

We may resist unjust coercion by:

12. Organizing and standing together.
13. Individual effort to promote the signing and observance of a uniform agreement.
14. The formation of a state organization, outside of the societies, to work to this end alone as outlined.
15. Every man resolving for himself that no matter what others may do he himself will not examine for less than $5.

The following methods were used to elicit an expression of opinion from the members of the profession: A letter was sent to every medical man in the district, asking him to sign an agreement to make no old-line examinations for less than $5. All of the physicians of New Plymouth, Weiser and Payette, Idaho, and Vale, Nyssa and Ontario, Ore., signed the agreement. A copy of this agreement, with the signatures, was then sent to every physician in the state of Idaho, enclosing a postal card, on which was printed the same agreement. Out of 85 replies received at the time of Dr. Woodward's report, 75 were unconditionally in the affirmative, 9 were affirmative, with some conditions, and a single reply was negative.

What One Physician Is Doing in the State of New York.

Dr. Samuel A. Gluck, Brooklyn, is the author of several very excellent bills that have been presented before the General Assembly of the State of New York, of which body he is a distinguished member.

The first is an act to amend the penal code in relation to cigar making, providing that it shall be unlawful for any persons making cigars to place any cigar or material comprising it to tongue or lips while in the progress of making. This is of the utmost importance to the public health, as syphilis and other infectious diseases are often contracted by the habit which the bill seeks to suppress.

The second bill is an act regulating and restraining the practice of midwifery in the city of New York. The importance of such regulation is too obvious to require comment.

The third bill is an act to amend the public health law, extending the powers and duties of the health commissioner, and placing in his hands the proper disinfection of public buildings, railroad depots, coaches, sleeping cars, etc.

Dr. Gluck is a member of the public health committee of the General Assembly of New York, as well as a member of the Auxiliary Legislative Committee of the American Medical Association, and is a prominent, active worker in all things pertaining to public health. It is to be hoped that these three bills will be adopted by the General Assembly.

The Way One Problem Was Met.

The necessity for concerted action on the part of the profession, if the agitation against the reduction of fees in insurance examinations is to be successful, is emphasized by *Southern Medicine and Surgery* in its December number. In speaking of the problem to be met the editor says:

"Occasionally individual members for imperative financial reasons feel that they can not yield their appointments even with reduced fees. I know of such an instance which occurred recently in Georgia. One of the most honorable members of a county society said he absolutely could not support his family and meet his obligations without his income from insurance examinations. This exigency was promptly met when several of his more prosperous confrères visited him, expressed their appreciation of his situation, and offered to throw him sufficient work as anesthetist, assistant and otherwise, to permit him to lose, if need be, his insurance appointments. This resulted in a unanimous action on the part of that large county society, and exemplified a very practical and generous manner of avoiding individual embarrassment, yet achieving unity of action."

The Ingham County (Mich.) Medical Society has issued a letter to its membership announcing the establishment of a postgraduate course in the form of a series of clinical demonstrations. For the March meeting lesions of the heart will be demonstrated. In May different forms of tuberculosis will be shown. The meeting in September will be devoted to skin diseases. If this sort of work keeps up in Ingham County it will not be long before the members of the county society find that four meetings a year give them far too little time to do the work and carry out the discussions which they will find necessary. A busy society always finds that its meetings are too short and too far apart.

The copy of the program of the Newcastle County (Del.) Medical Society shows a membership of 65, with an average attendance for the past year of 20. The program for the January meeting was devoted to a symposium on eclampsia, papers being presented by different members of the society on etiology, diagnosis, symptomatology, pathology, eye and nervous manifestations and treatment. A general discussion closed the meeting.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

YOHIMBIN.

——, ILL., March 20, 1907.

To the Editor:—Kindly inform me regarding yohimbin, its origin, use and dosage, as I am unable to find anything in the literature at hand. L. R. K.

ANSWER.—The following description of yohimbin is given by Sollmann (Text-book of Pharmacology, 2d edition, p. 225). Yohimbin ($C_{22}H_{28}N_2O_3HCl$) is an alkaloid isolated by Spiegel (1896) from the bark of the Yohimbehe tree (family of *Apocynaceæ*) growing in German West Africa. The local application (1 to 2 per cent. solution) produces the same anesthetic effects as cocain, and is less toxic. The effect begins in 10 to 15 minutes and lasts ½ to 1¾ hours. The vessels are rather dilated, even when adrenalin is added. In the eye the anesthesia occurs more promptly (½ to 1 minute, lasting from 10 to 15 minutes). It should not be used in this organ since it causes considerable irritation, lasting 4 to 6 hours. Accommodation is but little affected. When it is given by the mouth or hypodermically in moderate doses it produces a general vasodilation in the skin, mucous membranes, and particularly in the sexual organs. In consequence of the latter and perhaps by a direct action of the spinal centers, it produces erection. It does not seem to stimulate the production of spermatozoa or sexual desire.

In consequence of this action on animals, the alkaloid has been used as an aphrodisiac in neuropathic impotence; apparently with fair success. The reports must be accepted with caution, considering the possibility of psychic suggestion. The effect in animals occurs immediately; that in man only after some four to six weeks. This makes it difficult to explain the clinical observations by the animal experiments. The continued administration of the alkaloid is said to lead to no bad effects; however, the resemblance of its actions to those of cocain would suggest that it may perhaps create a habit. Ordinary doses produce a psychic excitement similar to that of cocain (this has been referred to dilation of the cerebral vessels). There is also some distension of the cerebral vessels and vertigo. Gastric disturbance has been noticed. The effects of larger doses also agree with those of cocain. Toxic doses cause general stimulation and subsequent paralysis of the nervous centers, particularly in the medulla. Death occurs by respiratory paralysis. (Loewy and Mueller: Muench med. Wochsch., No. 15, 1903.)

The free alkaloid and the solutions of the hydrochlorid being unstable, the dry salt is marketed in the form of tablets, containing 0.005 gm. (1/12 grain); three tablets per day are the ordinary dose.

According to A. Loewy (Therapie der Gegenwart, December, 1906), yohimbin has been applied successfully in several cases to secure the return of the rut in cows, bitches and sows. He thinks this offers encouragement for its use in women where sexual frigidity is complained of. Several authors have used it for this purpose with favorable results, among them Kronfeld, Euler-Rolle, Topp and Berger; Schalenkamp, on the other hand, could not observe any effect in a case under his care. Loewy thinks that it will be useful in cases of irregular and scanty menstruation, and cites favorable reports by Simons, Schalenkamp and Toff. He thinks it should also be recommended in premature occurrence of the menopause.

THE FIRST FRENCH PUBLICIST.

PHILADELPHIA, March 20, 1907.

To the Editor:—In your editorial on page 2016 of THE JOURNAL, Dec. 15, 1906, about the middle of the first column, you say: "Thirteen years later the Paris faculty found itself impelled to decree the free use of antimony." Is it a fact that the faculty "decreed" the use of antimony, and what right had the faculty to "decree" anything? S. H.

ANSWER.—At that time the Faculty of Medicine of Paris exercised a great deal of autocratic power in medical matters. The introduction of antimony and other "clinical medicines" by Paracelsus (1490-1541) and his followers was opposed not only by the faculty in Paris, but also by other bodies of similar scope, as, for instance, the College of Physicians and the Society of Apothecaries in England. In Paris the struggle was especially bitter. Owing to the favor of the king (Louis XIII) and Cardinal Richelieu, Renaudot was able to maintain himself in spite of the opposition of the faculty, which allowed no one but those promoted by itself to practice in Paris. When Richelieu died the faculty cancelled Renaudot's license. In the meantime Renaudot and others had spread the knowledge of the therapeutic use and value of antimony and eventually the Paris faculty withdrew its opposition to antimony (presumably by virtue of established custom and privilege) and formally decreed that its free use was permitted.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 23, 1907.

Appel, A. H., surgeon, the leave granted in S. O. 24, Feb. 1, 1907, Philippines Division, is extended two months and fifteen days.

Banister, William B., surgeon, relieved from duty at Jefferson Barracks, Mo., and will proceed to San Francisco, and take transport to sail from that place about April 5, for the Philippine Islands, and on arrival at Manila, to report to the commanding general, Philippines Division, for assignment to duty.

Rich, Edwin W., asst.-surgeon, will accompany the battalion of the 23d Infantry at Fort Ontario to Jamestown, and on arrival to be assigned to duty as surgeon of that regiment.

Nelson, Kent, asst.-surgeon, will proceed from Fort McHenry, Md., to Fort Myer, Va., in due time to accompany the 3d Battery, Field Artillery from that post to Jamestown, and remain with it during the encampment.

Banister, John M., deputy surgeon general, left Omaha on 14 days' leave of absence.

Crosby, Wm. D., surgeon, ordered to accompany Company E, 14th Infantry, from Vancouver Barracks, Wash., to Presidio of Monterey, Cal.

Wakeman, Wm. J., surgeon, died at hospital, Fort Monroe, Va., March 20, 1907.

Farr, Charles W., asst.-surgeon, granted 3 months' leave on surgeon's certificate of disability.

Morris, Samuel J., asst.-surgeon, granted leave of absence for 21 days, effective May 25, 1907.

Collins, C. C., asst.-surgeon, granted 2 months and 20 days' leave of absence.

Steer, Samuel L., asst.-surgeon, the resignation of his commission as an officer of the Army has been accepted by the President, to take effect July 3, 1907.

Smart, Robert, asst.-surgeon, ordered to report in person on Tuesday, May 14, to Major William C. Borden, surgeon, president examining board, Army Medical Museum Building, Washington, D. C., for re-examination to determine his fitness for advancement.

The following named first lieutenants, asst.-surgeons, will report in person on the dates specified, to Major William H. Arthur, surgeon, president examining board at Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for advancement:

April 23, 1907: Nelson Gapen, William T. Davis.
April 30, 1907: Charles F. Morse, William M. Smart.
May 7, 1907: Will L. Pyles, Cary A. Snoddy.
May 14, 1907; Haywood S. Hansell, Jay W. Grissinger, Charles C. Billingslea.

The following named first lieutenants, asst.-surgeons, will report in person on the dates specified, to Lieut.-Col. Geo. H. Torney, deputy surgeon general, president examining board at the General Hospital, Presidio of San Francisco, for examination to determine their fitness for advancement:

April 23, 1907: Louis C. Duncan, William L. Keller, Harold W. Cowper.
May 14, 1907: Samuel E. Lambert, Clarence H. Connor.
May 21, 1907: Junius C. Gregory, Harry S. Purnell.
June 18, 1907: Robert M. Blanchard.

Rhoads, Thomas L., asst.-surgeon, will, in addition to his present duties, assume charge of the office of the chief surgeon, Department of the Missouri. In the performance of this duty Captain Rhoads will make not to exceed six trips each week from Fort Crook, Neb., to Omaha, and return.

Wing, Franklin F., dental surgeon, left Fort Robinson, Neb., and arrived at Fort Mackenzie, Wyo., for duty.

Chambers, William H., dental surgeon, relieved from duty in the Philippines Division in time to sail, May 15, for the United States, for station.

Voorhies, Hugh G., dental surgeon, relieved from duty in the Philippines Division in time to sail for the United States on the transport *McClellan* for station.

Sanford, Joseph L., contract surgeon, ordered to accompany 27th Battery, Field Artillery, from Fort Ethan Allen, Vt., to San Francisco, and then return to proper station, Fort Washington, Md.

Greenwell, Samuel A., contract surgeon, granted leave of absence for one month.

Love, Joseph W., contract surgeon, arrived at San Francisco, from Philippine service, and ordered to Fort Preble, Me., for duty.

Brown, Polk D., contract surgeon, arrived at San Francisco, from Philippine service, and ordered to Fort St. Philip, La., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 23, 1907:

Scott, T. W., pharmacist, ordered to the Naval Academy.

Curl, H. C., surgeon, ordered to the U. S. Naval Medical School, Washington, D. C.

Brooks, F. H., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., ordered to the *Annapolis*.

Bagg, C. P., and Alfred, A. R., surgeons, ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

Holcomb, R. C., P. A. surgeon, detached Naval Station, Culebra, W. I., to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

Shaw, H., P. A. surgeon, detached Naval Hospital, Pensacola, Fla., ordered to Naval Station, Culebra, W. I.

Waggener J. R., medical director, ordered to Naval Recruiting Station, Providence, R. I., April 1.

Payne, J. H., P. A. surgeon, detached Naval Recruiting Station, Providence, R. I., ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 20, 1907:

Wertenbaker, C. P., surgeon, granted leave of absence for 3 days from March 18.

Gardner, C. H., P. A. surgeon, detailed as a member of the Revenue-Cutter Service Retiring Board convened to meet in San Francisco, Cal., April 2.

von Ezdorf, R. H., P. A. surgeon, relieved from duty at Havana, Cuba, and directed to proceed to New Orleans, reporting arrival by wire.

Hobdy, W. C., P. A. surgeon, detailed as a member of the Revenue-Cutter Service Retiring Board convened to meet in San Francisco, Cal., April 2, 1907.

King, W. W., P. A. surgeon, directed to proceed to Missoula, Mont., via Chicago, for special temporary duty, on completion of which to rejoin his station at Hygienic Laboratory, Washington, D. C.

Fox, C., P. A. surgeon, directed to proceed from Port Townsend, Washington, to San Francisco Quarantine Station for duty and assignment to quarters.

Amesse, J. W., P. A. surgeon, leave of absence granted for 14 days from May 4 amended to be effective May 14, 1907.

Berry, T. D., P. A. surgeon, granted leave of absence for 1 day.

Lloyd, B. J., P. A. surgeon, granted leave of absence for 2 days from Feb. 8, 1907.

Campbell, Clarence R., acting asst.-surgeon, granted leave of absence for 3 days from March 12, 1907, under paragraph 210 of the Regulations.

Primrose, R. S., acting asst.-surgeon, granted leave of absence for 3 days.

Terry, M. C., acting asst.-surgeon, granted leave of absence on account of sickness for 30 days from Jan. 1, 1907, and 30 days' annual leave from Jan. 31, 1907.

BOARDS CONVENED.

A board of medical officers was to meet at the Bureau at 10 a. m., April 15, 1907, for the purpose of examining applicants for the position of assistant surgeon in this Service. Detail for the board: Surgeon L. L. Williams, chairman; P. A. Surgeon H. S. Mathewson; P. A. Surgeon Joseph Goldberger, Recorder.

A board of medical officers was to meet at Boston, March 21, 1907, for the physical examination of an officer of the Revenue-Cutter Service and an applicant for the position of second assistant engineer. Detail for the Board: Surgeon R. M. Woodward, chairman, and P. A. Surgeon B. S. Warren, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 22, 1907:

SMALLPOX—UNITED STATES.

California: San Francisco, March 2-9, 1 case.
Illinois: Chicago, March 9-16, 5 cases.
Indiana: Indianapolis, Feb. 24-March 10, 9 cases.
Iowa: Davenport, March 1-15, 1 case.
Kansas: Lawrence, Feb. 1-28, 1 case; Topeka, March 2-9, 5 cases.
Louisiana: Shreveport, Feb. 23-March 2, 1 case.
Ohio: Cincinnati, March 8-15, 1 case; Cleveland, 1 case.
Pennsylvania: Homestead, Feb. 28-March 7, 2 cases.
Tennessee: Nashville, March 9-16, 1 case.
Wisconsin: Milwaukee, March 2-9, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Mariveles Quarantine, Jan. 26-Feb. 2 (on S. S. *Pioneer*).

SMALLPOX—FOREIGN.

Africa: Cape Town, Jan. 26-Feb. 2, 1 case.
Argentina: Buenos Aires, Jan. 12-26, 12 cases, 3 deaths.
Brazil: Bahia, Jan. 12-Feb. 16, 26 cases, 1 death; Para, Feb. 2-9, 1 case; Pernambuco, Jan. 15-31, 60 deaths; Rio de Janeiro, Feb. 2-9, 1 death.
Canada: Digby County, N. S., Feb. 2-9, 36 cases, 3 deaths.
Chile: Coquimbo, Feb. 6, 25 cases, 2 deaths.
China: Shanghai, Jan. 6-13, 1 case, 1 death.
Columbia: Cartagena, Feb. 24-March 3, 3 deaths.
Ecuador: Guayaquil, Feb. 16-23, 2 deaths.
Egypt: Cairo, Feb. 18-25, 3 cases, 1 death.
France: Marseilles, Feb. 20-March 6, epidemic.
Great Britain: Cardiff, Feb. 23-March 2, 2 cases; Hull, Feb. 16-23, 2 deaths; Newcastle-on-Tyne, Feb. 16-23, 1 case.
India: Calcutta, Feb. 2-9, 50 deaths.
Italy: General, Feb. 1-28, 7 cases.
Mexico: Aguas Calientes, March 2-9, 2 deaths.
Netherlands: Rotterdam, Feb. 23-March 2, 1 case.
Russia: Odessa, Feb. 16-23, 28 cases, 7 deaths.
Siberia: Vladivostok, Jan. 21-28, 1 case.
Spain: Malaga, Feb. 16-23, 1 death.
Turkey: Constantinople, Feb. 17-March 3, 3 deaths.

YELLOW FEVER—UNITED STATES.

Texas: Galveston, March 17, 1 case, 1 death (from S. S. *Basil* from Para).

YELLOW FEVER—FOREIGN.

Brazil: Para, Feb. 2-23, 1 case, 6 deaths; Rio de Janeiro, Feb. 2-9, 1 case.
Ecuador: Guayaquil, Feb. 16-23, 7 deaths.

CHOLERA—INSULAR.

Philippine Islands: Provinces, Jan. 6-12, 43 cases, 23 deaths.

CHOLERA—FOREIGN.

Ceylon: Colombo, Jan. 26-Feb. 2, 1 case, 1 death.
India: Calcutta, Feb. 2-9, 105 deaths

PLAGUE.

Argentina: Buenos Aires, Jan. 12-26, 3 cases, 1 death.
Australia: Brisbane, Jan. 12-19, 8 cases, 1 death.
Brazil: Bahia, Jan. 12-Feb. 16, 4 cases, 6 deaths; Para, Feb. 2-23, 9 deaths.
Chile: Antofagasta, Feb. 6, 14 cases, 6 deaths; Santiago, Feb. 2, present.
China: Niuchwang, Jan. 23-30, 39 cases, 36 deaths.
Egypt: Provinces: Beni Souef, Feb. 15, 1 case, 1 death; Guerga, Feb. 17-21, 4 cases, 4 deaths; Kena, 4 cases, 4 deaths; Kouss, Feb. 21, 1 case, 1 death; Minieh, Feb. 19-21, 4 cases, 4 deaths.
India: General, Jan. 26-Feb. 9, 20,262 cases, 20,706 deaths; Calcutta, Feb. 2-9, 21 deaths.
Peru: Callao, Feb. 8-16, 1 case; Chiclayo, Feb. 7, 6 cases, 6 deaths; Ferrenafe, 7 cases, 7 deaths; Lima, 6 cases, 4 deaths; Mollendo, 1 case; Pacasmayo, 2 cases, 1 death; Pueblo Nuevo, 2 cases; Trujillo, 12 cases, 3 deaths.

Miscellany

AN APPRECIATION OF THE LATE DR. GEORGE CHISMORE OF SAN FRANCISCO.

By Douglas W. Montgomery, M.D.

SAN FRANCISCO.

Robert Louis Stevenson once put forward, as an ideal life, an adventurous youth and a serene and prosperous old age. He may have been thinking of his friend, George Chismore, whose youth was spent in the sough of the forest and the surge of the ocean, and whose latter days were passed in the kindly practice of the most beneficent of professions. The following anecdotes will probably give a more vivid picture of his sympathetic nature than any detailed description.

A salient feature of George Chismore's character was self-respect, and he frequently jokingly remarked that he did not need other people's respect, as he furnished such a fine brand of the article for home use. He loved to tell stories, especially Scotch ones, bearing on self-respect.

Chismore followed many vocations in his day, and among others had been a dentist, and as he used to remark, "a good one, too." Even after he began the practice of medicine this was of use to him, as in the early days here the general practitioner, as Chismore then was, did everything. One day an old Scotchman called at the office holding his jaw, and with an expression of pain, asked:

"Can ye pull a tooth?"

"Yes, I can."

"How much will ye charge me?"

"Two dollars and a half." The usual fee for an office consultation in those days.

"I winna pay it." And the old man, still with his hand to his jaw, turned to leave.

"Stop," said Chismore, "it is a rule with me never to allow a man to leave this office suffering pain, if I can alleviate it. I'll pull your tooth for nothing."

"I'll noo do that neither." And the old man pursued his course with relentless pertinacity and self-respect.

If a man properly esteems himself and his own rights, it is the nearest way to get a just idea of the rights of his fellows. The following will throw a clear light on Chismore's ideas in this regard:

Chismore and I were in the smoking room of a train coming from Chicago, when he fell to telling of having been called not long before to Monterey to see a patient, an elegent looking, elderly Englishman, refined in dress and in speech. The patient soon began talking of diamonds and of some mines in which he was interested, and showed several fine stones both cut and in the rough. He then, said Chismore, proceeded to relate how those stones were obtained, and in doing so detailed, but without the least appreciation of its horror, one of the most glaring crimes against human dignity. He told how they hired negro miners by contract, shut them up in a corral, and at the end of their term, after purging them, searched them in the most intimate recesses of their bodies. "Now," said Chismore, "what can be the moral attitude of a man, turned loose on the desert with the little money owing him flung at him, and after such a search?" "But," said a picture dealer who was present, "if the owners didn't do that the men would steal." "Well," said Chismore, "if every man who had the opportunity to steal were so searched, very few of us would escape the painful experience." The picture dealer subsided.

The above shows an admirable feature of Chismore's character, and one that I am afraid we medical folk are apt to become dulled in; a keen appreciation of sexual shame and privacy. We become so used to seeing human nakedness exposed that we finally, if not on the alert, begin to lack the sense of one of the most beautiful of human attributes, and one the piety of which we can not afford to transgress.

Another story Chismore loved to tell was of a man who was relating the way some capitalists from Europe, on a famous railroad inspection tour in 1883, treated the people of the country through which they passed. As he told of insolence after insolence committed by some of these, the bystanders vented their indignation in picturesque frontier language against the perpetrators; all but an old Scotchman who stood silently by. "Well, Donald, what do you think of that?" said the speaker as he related a particularly striking instance of brutal impudence. "Dom the people that'll stan' it!" was the deliberate and emphatic response. This was a view directly after Chismore's own heart, for the old Scotchman had hit the nail on the head, and Chismore wrung the old man's hand in lively appreciation of the sentiment.

Many a time have I thought of this while reflecting on the arrogant, insolent and high-handed manner some of the English fire insurance companies are exhibiting in settling their losses in this city. "Dom the people that'll stan it!"

The following can only be appreciated by knowing the Highland characteristic of being laconic, and of calling everything "she." It is said of a Highlander that he calls everything she but his wife, and that's he. The scene of the incident was, if I am not mistaken, the Hudson Bay Company's factory in Vancouver. The floor was of hardwood, and was as smooth as glass, and highly polished by grease and by the moccasined or bare feet of the Indians. An Indian was seated on the floor facing the wall at one end of the apartment, lost in contemplation after the manner of his kind. An old Scotchman was standing in the middle of the room examining a gun, a beautiful piece of mechanism. It was double barreled, one barrel a rifle and the other a shot gun, and the barrels swung on a swivel, so that they came into place as required. The Scotchman was holding the gun in the bend of his left arm and amusing himself by swinging one barrel and then the other into place. The day before he had been doing the same thing in the open, and one of the barrels had accidentally gone off. This time the same accident again happened, and the shot gun went off with a bang, the shot striking the hard polished floor a short distance this side of the Indian, and ricochetting into his body. He sprang up with a yell, and disappeared rapidly through the door and down the street. The Highlander looked up quietly and remarked of the gun in an even voice, "She'll kill somebody yet."

Chismore lived long in Alaska, and delighted to tell of his experiences with the Indians, to whom he was much attached. He at times regretted leaving there, and thought that possibly he had made a mistake in coming back to civilized life. In fact, he at one time applied to the Smithsonian Institute to secure a pension in his old age, should he spend his life in noting the Indian habits. He wished the old age pension because the Indians then neglected their aged, and frequently killed them as other savages do. One of his Indian tales was very amusing.

One day while walking along the seashore he saw an Indian acquaintance bathing in a pool that was partially frozen over.

"What are you doing in there, Joe? Isn't it cold?"

"Stay here ten minutes—keep warm all day—no chop wood."

"That's right," said Chismore, "do anything to avoid cutting wood."

I suppose the Indian was a lineal descendant of Adam, who was so sure that work was a cursed thing.

At one time Chismore was a contract surgeon in the United States Army, and camped from spring to spring through that desert that is now fertile southern California, and pushed on still farther south. As the troops approached the Gila river, Chismore and the officer in charge were somewhat in the rear, but on spying the flowing water they hastened their steps to enjoy a bath after their hot dusty march. They quickly stripped and plunged in the river, but instantly scrambled to the shore again, for the water was scalding hot. They then realized why a row of naked privates were seated on a hillock nearby grinning from ear to ear. They had had the same luck, and were waiting to see the captain and doctor perform.

Later on Chismore's fate led him to settle in San Francisco, where I first met him shortly after my arrival here in 1886. He and Harry M. Sherman had the strangest *ménage* I have ever seen. It consisted of four rooms, a large front room and three toward the rear. One of the latter was Chismore's bedroom, and the head of his bed was on a line with the bedroom door and also with the front door. A man therefore lying in

bed commanded both doorways, and when Sherman first went in with Chismore he was warned, if he came in late at night, that he must answer immediately if hailed, as otherwise he might be shot. In those days Chismore never locked the front door, although it led directly downstairs into Market street, the chief thoroughfare of the city. The gun was the only door-lock, for that was the law of the frontier. After a time his friends prevailed on him to lock his door for their sake if not for his own. The day following this innovation a thief broke in and made a large haul. Chismore explained to his friends the folly of their advice, but nevertheless always afterward locked his door.

The rooms were low ceiled and dingy looking, the carpets matched, and when I tell you the treatment Chismore's bed received you can imagine its appearance. Sherman's office hours ran from 11 a. m. to 1 p. m., and Chismore's from 1 to 3 p. m. My office was in another locality, but being new to practice and having nothing to do, and Sherman having a like amount of occupation, I used to visit Sherman during his office hours, and we would stretch out on Chismore's bed and practice pistol shooting across the foot of it at a mark on the opposite wall. By this means, and by telling stories and in musing on what we would do when we should have a large practice, we managed to kill the tedious hours. We were rarely interrupted by patients; all these came in the afternoon during Chismore's hours. One great comfort of the bed was that one could lean over anywhere and pick off the floor a piece of jerked venison, the fruit of the doctor's many hunting expeditions. I never heard that Chismore complained of the appearance or of the discomfort of his bed; it would have been unlike him to have done so.

Stacked against, and hung around, the walls were guns, rifles, pistols and totem poles, and among these were beautiful pictures, for Chismore was always found of art. There were books, too, for the man loved reading. In the most remote room was an elaborate set of tools for working in iron, an occupation he was always fond of, and which he turned to good account in perfecting his lithotrite.

Chismore once told us in these days when we were waiting for our luck, of his own first hardships in getting a practice. At one time he had not enough money to get ordinary food, and lived on milk alone. While doing this he used to run a given stretch each day to test his strength, and to find if he were failing. I think he said he kept this up for a week, and then on getting a fee, he gave himself a French dinner, the like of which he never afterward ate. He rapidly acquired a remunerative practice, and in so doing he had many strong aids. In the first place he had the solid basis of working hard and ingeniously for the comfort and recovery of his patients, and in the second place he loved his fellow-man and his fellow-man knew it; and thirdly, he was a born optimist. He was fond of his patients, and never believed that anything so mean as disaster could befall them, and heartened them by assuring them of it. A physician is more kindly remembered by the hopeful things he says to his patients than for his sinister prophesies, no matter how scientifically accurate these may be.

Chismore was as tolerant of human imperfections as Anatole France. At 2, or therabouts, in the morning a rap would occasionally come on the front door. A wreck of a man with one eye would enter, and walking over to Chismore's bed would waken him. Chismore would fumble in his pockets for 50 cents, hand it to the man, and turn over to sleep. The wreck would try to close the door as softly as possible, but it always made a sharp clir-r-r in the hollow night, for it was a frail structure with many panes of glass in its upper part. Unsteady steps descended the stairs and all became silent as before. One morning the exasperated Sherman told Chismore that the next time that miserable beggar would come he would fire him. "No, don't do that," said Chismore; "he is a morphin fiend, and only comes to ask help under the extremest pinch of necessity."

Though kindness itself to those who relied on him, he had no patience with the arrogant rich. He was called once to see a very rich man, who had come by his wealth suddenly in a mine, and who was suffering from hemorrhoids. During the examination the patient was as insolent as his nature constrained him to be, and Chismore returned immediately to his office, wrote out a bill for a good fee, and forwarded it by a messenger boy. The boy quickly returned with the money, and Chismore considered his connection with the case closed. The day following, however, he was sent for again, and, on arriving, found his majesty the brute tamed. An operation was proposed, assented to and performed, and the patient, after the operation, was particularly admonished against getting out of bed or sitting up. On entering the room at the next visit what should Chismore see but the patient sitting in a chair before the fire. He was leaning forward, and as the doctor entered he half turned his head and leered that evil smile that we all of us have seen when an ill-natured patient thinks he has gotten ahead of the doctor. Chismore stopped short, pointed his finger at the bed, and said: "You get back there or I'll lick you." The patient slid quickly into bed, drew up the clothes and looked timidly over the sheets at Chismore, who was now standing at the foot. Chismore explained in vigorous English, in which he was particularly felicitous when aroused, that he had not sought the operation, but that once having operated he was responsible for the result, and that being so, his orders had to be obeyed and punctiliously, or there would be trouble. On such occasions he gave utterance to remarks that induced reflection. The man made a good recovery, and in afterward recommending a patient, said that Chismore was a fine doctor, but a little hasty tempered.

Toward the end of his days Chismore's naturally fine shrewd face grew ethereal looking, and even more noticeably kind. If there is a Heaven, George Chismore will surely be in it, and if there are other human beings there he will enjoy himself.

The Physician, the Brain; the Surgeon, the Hands.—An article is going the rounds of the medical press abroad which affirms that when the family physician decides that an operation is necessary he should take complete charge of the case as the contractor takes charge of a building to be erected. "Medical practice," the writer says, "will become what it should be when the surgeon is put in his proper place, which is in a position subordinate to the physician. The physician should diagnose and plan the operation, should select the surgeon, and the fees should be fixed by the physician, the bill be rendered by him, and paid to him. The amount charged should be commensurate with the responsibility incurred and the patient's pecuniary position." The article (*Gaz. Méd. Belge*, March 7) continues to the effect that when an individual applies directly to a surgeon and there is no emergency, the surgeon should refer the patient back to a physician, saying that he does not know whether medical measures have been tried to the fullest extent, and, if operation is necessary, he must first consult with a physician knowing something of the constitution and clinical past of the patient. The writer continues: "Many surgeons would be astonished if we were to tell them that they rob their medical confrères of hundreds of dollars every year by their present methods, and to the direct detriment of their patients."

Sale of Drugs in Turkey.—The Constantinople correspondent of the *Lancet* states that several fatalities are reported as the result of selling drugs to the public without a prescription. A law exists in the Ottoman Empire prohibiting this, but like many other good laws in Turkey it remains a dead letter for lack of a strong will and hand to compel its enforcement. All kinds of drugs, even the most poisonous, have been sold by all kinds of shops to any one on demand. The abuse has been especially great with regard to proprietary articles, the composition of which is unknown. The law entrusts the whole matter to the prefecture of the city, and this, in turn, has to see that every medicine and pharmaceutical preparation is sold to the public only by authorized, duly qualified pharmacists and officially recognized specialists, and only then when the properly signed prescription of a medical man is presented. Recently a new official communication has been sent to all the pharmacists and druggists in Constantinople reminding them of the law and calling attention to the penalties that will follow further indiscriminate sale of drugs.

Book Notices

SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY. An Introduction to the Study of Obstetrics and Gynecology for Medical Students and Practitioners. By W. P. Manton, M.D. Third Edition, Revised and Enlarged. Cloth. Pp. 136. Price, $1.25 net. Philadelphia: F. A. Davis Company, 1906.

While this work is especially designed for, and will be found particularly useful to, students in their first and second years at college, it is also a desirable manual for review and reference for the general practitioner. It is not intended to take the place of the exhaustive text-books on embryology, but is primarily for use in the class-room, supplementary to the lecture, and for laboratory guidance. It can also be used for self-instruction and in laboratory work in connection with the usual text-books. The present edition has been carefully revised and many new illustrations have been added.

RETINOSCOPY (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. By J. Thorington, A.M., M.D., Author of "Refraction and How to Refract," etc. Fifth edition, revised and enlarged, with fifty-four illustrations, ten of which are colored. Cloth. Pp. 67. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

In this new edition much that is modern and valuable is added to a work already recognized as a standard. Many new instruments have been added, notably an illustration of the DeZeng luminous retinoscope, with a description of its mechanism and method of application. The colored plates illustrating the pupillary reflexes seen in the different forms of refractive error are particularly good.

PRACTICAL TEXT-BOOK OF MIDWIFERY FOR NURSES. By R. Jardine, M.D., M.R.C.S., F.F.P., and S., F.R.S., Professor of Midwifery in St Mungo's College, Glasgow, etc. Third edition. Cloth. Pp. 276. Price, $1.50 net. Chicago: W. T. Keener & Co., 1906.

This book is based on lectures delivered to nurses of the Glasgow Maternity Hospital and is primarily intended as a text-book for them. The book, as the author admits in the preface, may be considered rather too comprehensive for nurses but he states that midwives are a very old institution and are likely to continue in existence so long as the poor are with us, and that those who teach them should endeavor to make their training as thorough as possible.

NATURE AND HEALTH. A Popular Treatise on the Hygiene of the Person and the Home. By E. Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. Cloth. Pp. 313. New York: Henry Holt & Co., 1905.

In this book the author considers briefly the most important points in hygiene and sanitation. The book is intended for the laity and is written in simple language. The deficiency of air space in the average dwelling is commented on and directions are given for ventilating. The author regards the open fire as ideal and prefers hot-water heat to steam or hot air. Singing as a general adjuvant to the well-being of the breathing apparatus and, indeed, of the whole economy, is recommended. The comparative value of the different foodstuffs is considered and the author calls attention to the evils of overeating as well as of under-feeding. He discusses the importance of a pure water supply and mentions the various methods of purification. Subsequent chapters take up: Seeing, hearing, clothing, disposal of waste, disinfection, exercise of body and mind, sleep, work and play, living and dying.

PATHOLOGY OF THE EYE. By J. H. Parsons, B.S., D.Sc., F.R.C.S., Assistant Ophthalmic Surgeon, University College Hospital, etc. Vol. III. General Pathology—Part I. Cloth. Pp. 1128. Price, $3.50 net. New York: G. P. Putnam's Sons, 1906.

In this volume Parsons takes up the subject of the general pathology of the eye, including congenital abnormalities, ametropia, the circulation and nutrition of the eye, the normal intraocular pressure and glaucoma. Nearly one-half of the book is devoted to the congenital abnormalities of the eye. An exhaustive résumé of the literature of this subject is presented, and there are many illustrations, both macroscopic and microscopic. Myopia is the subject of one of the most interesting chapters of the book. The various changes in the ocular tissues are taken up separately and explained on an anatomic and pathologic basis. Here, as throughout the work, are to be found exhaustive references to the literature. This particular feature makes the work invaluable as a source of reference. In the chapter on the circulation of the eye the author has drawn freely on the material furnished by the experiments of Leber in this field. In addition to the studies made on the circulation of the human eye, comparative studies of the circulation of the eye of the dog are given. The subject of glaucoma begins with the discussion of the normal intraocular pressure. The various forms of apparatus for measuring this pressure are illustrated and their manner of application explained. This is probably the most interesting portion of the book, embodying as it does the essentials of all of the theories and studies on this important subject. The pathologic studies of glaucomatous eyes are well illustrated and thoroughly discussed.

HEALTH TALKS ABOUT CHILDREN. A Plea for the Child. By J. Grimshaw, M.D., B.S. Second Impression. Paper. Pp. 83. Price, 40c. Philadelphia: P. Blakiston's Son & Company, 1906.

This book consists of a series of talks delivered to mothers. The language used is clear and forceful, and free from technicalities. Directions are given for feeding the child—preparing its food, etc.—caring for it in health and sickness, and diet of the mother. An appendix contains a list of things to do and not to do, and dietary lists. The book is a valuable one for mothers.

GYNECOLOGICAL DIAGNOSIS. A Manual for Students and Practitioners. By A. E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P., with 35 Original Illustrations. Cloth. Pp. 212. Price, $2.50 net. New York: William Wood & Co.

In an introductory chapter the author calls attention to the fact that the expert diagnostician makes the most successful practitioner and mentions the difficulties encountered in acquiring the necessary experience in gynecologic work. Instead of taking a disease and naming the symptoms, thus reasoning from cause to effect, Giles takes the predominating symptom or symptoms and reasons back to the cause. Part 1 considers the methods of recording history, present condition, treatment and after history, with methods of examination, instruments, significance of symptoms and physical signs. Part 2 is devoted to diagnosis of individual cases from leading symptoms.

DISEASES OF THE STOMACH AND INTESTINES, with an Account of Their Relations to Other Diseases and of the Most Recent Methods Applicable to the Diagnosis and Treatment of Them in General. By B. Reed, M.D. Second Edition. Cloth. Pp. 1021. Price, $5.00. New York: E. B. Treat & Co., 1907.

This book retains the lecture form with a certain familiar style of diction which serves to lend impressiveness to what the author has to say, although his method tends to interfere somewhat with the systematic presentation of the subject. Comparatively little space is given to pathologic anatomy, while, on the other hand, some unnecessary subjects, such as urinalysis, are included, presenting merely repetitions of what can be found in text-books on clinical diagnosis. The work has an advantage in that it combines in one volume the diseases which are generally found combined in practice.

INDICATIONS FOR OPERATION, in Disease of the Internal Organs. By Prof. H. Schlesinger, M.D., Extraordinary Professor of Medicine in the University of Vienna. Authorized Translation by K. W. Monsarrat, M.B., F.R.C.S., Surgeon to the Northern Hospital, Liverpool. Cloth. Pp. 498. Price, $3.00. New York: E. B. Treat & Co., 1906.

As stated in the preface by the author, this work is intended essentially for the practitioner as a guide in determining the necessity for surgical interference in diseases of the internal organs. In this it is highly successful. With small exception, the indications given are in accord with sound modern surgical principles. The value of the book is enhanced by concise but clear setting forth of the etiology, clinical course, pathologic anatomy and diagnosis of internal surgical diseases with much useful information as to the results of operative interference.

ESSENTIALS OF HUMAN PHYSIOLOGY. By D. N. Paton, M.D., B.Sc., F.R.C.P., Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Second edition, revised and enlarged. Cloth. Pp. 444. Price, $2.75 net. Chicago: W. T. Keener & Co., 1905.

This is not the sort of text-book that appeals to those whose interest in medical education demands that students

shall be taught the biologic sciences as sciences, and not as something from which a few kernels are to be gleaned for their value to medicine, the rest to be discarded as worthless. While the book is as full and accurate as this sort of book can be expected to be, yet it represents the unfortunate compromise between quiz compend and text-book that is so popular with a certain class of medical students and instructors. Students who are brought up on this type of book can hardly be expected to develop that investigative frame of mind which is essential to the student who is to do his own thinking, instead of relying implicitly on any "authority" who speaks to him from the printed page. Let it be understood that we are not condemning the present book in particular, but rather deploring the fact that there still seems to be a market for the type of book it represents. This book is now in its second edition, and has the advantage of being fairly modern in its handling of the subject of physiology. It does not seem to possess any peculiar merit beyond this, and, of course, is not to be compared with several larger text-books that seek to avoid the criticisms mentioned above. It must be added, also, that the illustrations of histologic structures are so imperfect and crude that they at once prejudice the reader against the text that accompanies them.

ELEMENTARY MANUAL OF REGIONAL TOPOGRAPHICAL DERMATOLOGY. By R. Sabourand, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. Marshall. Cloth. Pp. 570. Price, $5.00. New York: Rebman Company, 1906.

As indicated by the title, this volume differs from other works on dermatology by describing the various lesions, not according to their nature, but according to their location. Thus, under "Nose and Cheeks" are described all the lesions likely to occur on these parts of the body. The arrangement is slightly confusing to one accustomed to the classification ordinarily adopted in works on dermatology, and its practical usefulness remains to be demonstrated. The descriptions of the lesions and the illustrations are good, but more space might be devoted to treatment.

ATLAS AND TEXT-BOOK OF DENTISTRY, Including Diseases of the Mouth. By G. Preiswerk, M.D., Ph.D. Authorized Translation from the German. Edited by G. W. Warren, A.M., D.D.S. Cloth. Pp. 343. Price, $3.50 net. Philadelphia: W. B. Saunders Company, 1906.

Among the few translations of general dental text-books Preiswerk's "Atlas of Dentistry" is a most meritorious contribution. It is a credit to the author, but its value to the student is in the illustrations. The colored productions (copies of Professor Arkovy's reduced in size and the author's own original ones) certainly should aid the student in making a diagnosis of many diseases and a solution of some of the many puzzling questions dominant in dental pathology. The text, however, is only a condensed review of subjects, which may be found in any American or English text-book. What the dental student needs is a text-book of original research into the biologic studies of his specialty. A broader knowledge of general medicine (which this work does not contain) is necessary for the rational treatment of diseases of the mouth, jaws and teeth. Credit is due to the editor, Dr. George W. Warren, for the excellent translation.

PRINCIPLES OF MICROSCOPY. Being a Handbook to the Microscope. By A. E. Wright, F.R.S., Hon. F.R.C.S.I. Cloth. Pp. 250. Price, $6.50. New York: The MacMillan Company, 1907.

It may be as well to state in so many words that this handsome book in no sense is a guide to microscopic methods, clinical or otherwise. There are no directions here for fixing tissues, cutting sections, preparing smears, counting or staining various objects for microscopic study. The book "addresses itself to those . . . who desire to master the scientific principles of microscopy, even at the price of some intellectual effort." It is the microscope itself and the principles on which it is constructed that constitutes the theme of the distinguished author, whose name now is so familiar because of his discovery of opsonins and introduction of therapeutic inoculation. No extended review will be attempted. The work, which evidently is the result of much study over many years, is divided into two parts. Part I deals with the object or stage picture, and Part II with the development of the magnified microscopic image. Numerous experiments are outlined in order to help the reader understand the statements in the text. There are many illustrations. New technical terms have been coined as freely as seemed necessary to the author to make himself clear in order to avoid unnecessary circumlocution and mathematical formulæ. "Mathematical signs as a substitute for speech can be defended only in the case of the inarticulate classes of the learned." The style is peculiarly characteristic of the author. The subject-matter is carefully arranged in logical sequence, and it will be a pleasure to those who really wish to learn something about the scientific principles of the microscope, and not remain content, as most do, following a system of rule of thumb, to study this book; for it is a book to understand which will require actual study and experimentation.

PLASTER OF PARIS AND HOW TO USE IT. Martin W. Ware, M.D., Instructor of Surgery in the New York Postgraduate School. Cloth. Pp. 88. Price, $1.00. New York: Surgery Publishing Company, 1906.

This little book gives in a comprehensive way the various uses of which plaster of Paris may be put by the surgeon. The subject is clearly presented, and with the illustrations the book makes a useful manual of instruction. Details are given in full, from the making of a bandage to its application. The mechanical work is well done and the book presents a very neat appearance.

THE NEW HYGIENE. Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff, with preface by E. Ray Lankester. Cloth. Pp. 104. Price, $1.00 net. Chicago: W. T. Keener & Co., 1906.

These interesting lectures were delivered by Metchnikoff in London at the invitation of the Council of the Royal Institute of Public Health. They will be read with interest by medical as well as non-medical persons. The first lecture deals with "The Hygiene of the Tissues." Here Metchnikoff discusses the means whereby the body rids itself of infectious microbes, with special emphasis on the rôle of the phagocytes. It is quite entertaining to note the skill with which he puts to one side everything that in any way tends to lessen the importance of phagocytosis as developed by him and his school. Even the opsonins are denied the rôle currently assigned to them in the mechanism of phagocytosis. In the concluding part of the lecture he points out certain practical applications of our knowledge of the defenses against infection. The second lecture deals with "The Hygiene of the Alimentary Canal." Probably the majority of medical men will take issue with Metchnikoff as to the importance of worms in causing appendicitis. Certainly the surgeons have missed a great discovery if Metchnikoff's hypothesis on this point is found to have a basis in fact. Be that as it may, the evidence, slight though it be, is presented with great skill and suggestiveness, followed with a plea for measures that may prevent contamination of our vegetables with the ova of worms. In the third lecture, "Hygienic Measures Against Syphilis," the recent knowledge obtained from experimental syphilis in apes and monkeys is clearly set forth, especially from the point of view of preventive inoculation with attenuated virus. The small chance for prophylactic treatment of syphilis by means of having vaccines ever becoming practical is acknowledged. The various observations on the prophylactic inunctions of mercurial ointments immediately after suspicious contact, including the experimental work of Metchnikoff and Roux on apes and monkeys, as well as man, are then recounted and the method tentatively recommended for practical use. The possible objections of moralists to this plan, which, if found valuable, might serve to encourage vice, are skilfully met. There is about these lectures a certain charm, already familiar to the readers of Metchnikoff's previous writings, that makes the reading pleasant and profitable, even though one may be compelled to differ from some of the views presented. The truly philanthropic spirit of the author makes itself felt on every page, and the reader is impressed with the great value of scientific work in infectious diseases.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

Angina Pectoris.

(*Concluded from page 972.*)

Professor Lemoine, in *Le Nord Medical*, gives a brief résumé of things to be avoided in treating this condition. In true angina pectoris, caused by ischemia of the heart in the course of arteriosclerosis, at the time of the attack heart tonics, such as digitalis, ergot, caffein, strophanthus, convallaria majalis, should not be given; these agents would only increase the arterial tension, which is already too high. They should not be employed until the period of the disease occurs when the myocardium, attacked by sclerosis, is enfeebled, so that the cardiac fiber becomes inefficient. Huchard is of the opinion that during the attack the usual nerve sedatives, such as antipyrin, potassium bromid, sulphonmethane, paraldehyd and chloral hydrate should not be used. He also denies any therapeutic utility to belladonna and cocain in these cases. Lemoine advises against using potassium iodid for too long a time, as the potassium salts act unfavorably on the heart structures. After a brief period sodium iodid may be substituted for the potassium salt. The benefits of general sedatives and hypnotics should not be refused to patients suffering with pseudo-angina pectoris, when the pain is the most prominent symptom. The underlying general condition which may cause the symptoms, such as gout or diabetes, must be treated. The well-established principle of revulsion (especially the ice-bag and wet cups over the precordial region) must not be regarded as useless in cases of angina pectoris of infectious origin.

Anders, in his "Practice of Medicine," also advocates the application of cold to the precordial region, and states that rarely hot applications (hot cloths or mustard plasters) may give better results. He gives from 3 to 5 drops (0.18 to 0.30) of amyl nitrite by inhalation and states that if this does not give relief from the pain morphin, gr. 1/3 (0.021) should be given hypodermically. In cases in which the arterial tension is habitually exalted, Anders advises giving nitroglycerin, beginning with min. 1 (0.06) and increasing the dose by min. 1 (0.06) every five or six days, until the physiologic effects are produced. He states that sodium nitrite may be employed similarly, the dose being gr. 1 to 3 (0.06 to 0.18) three or four times a day. When hypertrophy of the left ventricle is excessive the following combination, Anders says, is effective:

R.	Tincturæ aconiti	m. xlviii	3|10
	Sodii bromidi	℥ss	15|
	Elix. simplicis, q. s. ad	℥iii	90|

Ft. mist. Sig.: Four teaspoonfuls three times a day.

This may be omitted at the end of every two weeks for two or three days.

[It might be well to commence with a smaller dose of the aconite till the effect on the patient could be noted.—ED.]

Phenolphthalein as a Purgative.

Phenolphthalein is a yellowish powder, very slightly soluble in water, readily soluble in alcohol and in aqueous solutions of hydroxids and carbonates. It is colorless in acid solutions and red in alkaline liquids. So far as our present knowledge goes, it produces no noticeable physiologic effect except that of a purgative. When absorbed it is excreted in the urine, unchanged in chemical character, but sometimes in combination so that its characteristic color with alkalies is only shown after the combination is broken up by heating with an acid. It has long been in use by chemists and clinicians as an indicator of alkalinity in determining the acidity of gastric contents, urine, etc.

Its introduction into therapeutics is more recent and has attracted comparatively little attention. The discovery of its purgative properties is stated to have been due to its use in artificial Hungarian wines to prevent their substitution for the genuine wines. It was noticed that when these cheap wines were "denatured" by the addition of phenolphthalein their use was regularly followed by diarrhea. This led to the introduction of phenolphthalein as a proprietary remedy, and it has been advertised in Europe, especially in Great Britain, for the last five years under the name of purgen (see THE JOURNAL, Nov. 8, 1902, page 1218; Jan. 5, 1907, pages 64 and 70). Other trade names for phenolphthalein or substances containing it are: Purgen konfect, paraphthalein, purgatol, purgotin, purgo, purglets, purgella, purgolade, purgylum, laxireonfect, laxine, and el zernac. Phenolphthalein is also an active constituent of the proprietary probilin pills.

As yet it has received little attention from pharmacologists, its medicinal use remaining unnoticed in the latest textbooks, even so extensive a work as the "National Dispensatory" stating that it is not used in medicine.

The investigations of Vamossy, Dornblüth, Tunnicliffe and others seem to show, however, that it is a safe cathartic, acting without pain, in from four to six hours, and leaving less tendency to sluggishness of the bowels as an after-effect than other cathartics. From the evidence presented it would seem that phenolphthalein will be valuable in the treatment of habitual constipation.

In Martindale and Westcott's "Extra Pharmacopeia" (British), page 24, it is stated that phenolphthalein is "useful where a prompt purgative is required as in jaundice," and further that it "does not irritate the kidneys."

The dose generally recommended varies from 0.06 gm. (1 grain) to 0.30 gm. (5 grains), but it must be borne in mind that certain individuals possess a marked idiosyncrasy to phenol compounds and that in such cases phenolphthalein should be prescribed with caution. It may be given in the form of pills, capsules, tablets or powders. Pharmaceutical manufacturers are beginning to put it up in tablets and in other forms for medical use, but of course any pharmacist can procure the drug and dispense it as prescribed.

It may be prescribed as follows:

R.	Phenolphthalein	3i	4|
	Div. in capsulæ No. xx.		

Sig.: One capsule at bedtime when necessary.

Powders may be ordered instead of capsules.

It is a reflection on our means of diffusing information and on the readiness of physicians to apply new discoveries that our knowledge of a valuable remedy should depend on the propaganda of commercial interests. Practical physicians who are looking for a new cathartic should try this substance under its own name and avoid its exploitation under fancy titles by commercial interests. It is well to remember that this substance is a perfectly definite chemical compound which can be easily obtained.

[Phenolphthalein belongs to a class of bodies known as Triphenylmethane-dyes, to which also fuchsin, eosin and fluorescein belong. Triphenylmethane may be considered as derived from methane, CH_4, by replacement of 3 hydrogen atoms by 3 phenyl groups, thus: $CH(C_6H_5)_3$. By replacement of the remaining hydrogen atom by hydroxyl, OH, and of one phenyl group by C_6H_4COOH, an acid is obtained having the formula, $C(OH)(C_6H_5)_2(C_6H_4COOH)$, which may be called hydroxy-diphenyl-phenylcarboxy-methane. This acid is unstable, and by loss of water passes to a compound having the composition $C(C_6H_5)_2(C_6H_4COO)$, which is known as phthalophenone.

Bodies of this kind are generally known as phthaleins and are obtained by the action of phenols on the anhydrid of phthalic acid $C_6H_4(COOH)_2$, so named because commonly made from naphthalene. Thus, phenolphthalein is obtained by the action of carbolic acid on phthalic acid anhydrid, $C_6H_4(COO)(CO)$. Phenolphthalein differs that 2 hydroxyl groups have been introduced into the 2 phenyl radicles, thus: $C(C_6H_4OH)_2(C_6H_4COO)$. The nature of the change which occurs when phenolphthalein is turned red by alkalies is still a question. It is quite possible that when treated with sodium hydroxid the red compound which is formed has the following composition $C(C_6H_4ONa)(C_6H_4{:}O)(C_6H_4COONa)$.]

Tar in Eczema.

H. Waldo (*British Med. Jour.*, March 2, 1907) says that it is almost unnecessary to mention that cleanliness of the eczematous surface should be carried out with weak alcohol, or, if the eczema is very acute, with weak warm gruel instead of soap and water.

When much thickening has occurred, and especially if fissures have formed, eczema rimosum, nothing is so satisfactory as local dressings of some reducing agent, as salicylic acid in various strengths. In severe cases of eczema, and when an extensive surface is involved, the good effect of rest should be remembered, and the patient confined to bed.

Although alcohol is valuable externally, it disagrees if given internally in eczema by dilating the peripheral vessels. Waldo asserts that if an adult's eczema is receiving suitable treatment, to which it does not favorably respond, the abuse of alcohol should be suspected. If the surface of an eczema does not show much redness, a weak preparation of alcohol and tar painted on once or twice in the twenty-four hours, in addition to the ordinary application, at once relieves the itching and cures the eczema if the case selected is found to tolerate this interference.

Crocker, "Diseases of the Skin," states that tar in some form is one of the most efficacious remedies in this condition, if used at the right stage of the disease. As it requires much experience to know just when to apply it, Crocker advises trying it over a small area to see how it suits the case before extending its use to the entire surface, for, if wrongly used, it is almost as powerful for harm as for good. Tar acts best, according to Crocker, in the squamous and papular forms of eczema, as it relieves the intense irritation better than anything else. It may be used in a mild form by adding a small quantity to the astringent ointments.

Hebra, quoted by Crocker, recommends that the pure wood tar or the oil of cade be brushed firmly into an eczematous patch after thorough removal of the scales, and reapplied until a thick coat adheres. This kind of treatment, Crocker states, is best suited to indolent patches, and the tar must be rubbed in vigorously. If only a small area is involved the tar may be soaked off with strips of flannel soaked in olive oil. If a limb or the whole body is involved the patient may soak the part affected in warm water for an hour or two. Hebra allows the tar to remain till it separates spontaneously.

Butler, "Text-Book of Materia Medica," states that the tarry preparations are valuable antipruritics and of service in pruritus and various itching diseases of the skin, although their tendency to produce irritative and inflammatory effects when continuously and injudiciously applied should not be overlooked.

The Alleged New Opium Cure.

Within the past few weeks a number of articles have appeared in the secular press regarding a new cure for the opium habit, alleged to have been discovered in the Malay Peninsula. Edward M. Holmes, the curator of the Pharmaceutical Society of Great Britain, in a communication in the London *Times*, gives the species as *Combretum sundaicum*, Miquel, a woody climber growing abundantly in certain parts of the Malay Peninsula. The medicinal properties of the natural order of plants to which it belongs, the *Combretaceæ* are not well known, though, according to Mr. Holmes, some of the species have been used in malarial fevers, two are known to possess vermifuge properties and one is used in poisoning bats. The few preliminary tests made with the small amount of material in the research laboratory of the Pharmaceutical Society so far have revealed only an astringent principle and a coloring matter. The tests give no definite proof of the presence of any alkaloid or glucoside, although the leaves appear, Mr. Holmes says, to contain some substance as yet unknown to chemists. From missionary reports it would appear that the plant has been used with much faith, which must be based on some apparent success, but details of how it acts in destroying the appetite for opium have not been given and sufficient time has hardly elapsed to test the permanence of the cures. According to the accounts, the leaves seem to be the efficient part of the plant. The opium question is a most important one here as well as in the East, and if this new drug successfully meets the test of experience and has its value confirmed by chemical and physiologic tests, it will be a valuable addition to materia medica.

Alteratives for Children.

Dr. Herman B. Sheffield, New York, states that arsenic, iodin and mercury are the leading remedies of this group. Arsenic is best given as Fowler's solution in plain water. Syrup of the iodid of iron with simple syrup forms a palatable and useful hematinic and alterative for children. Sodium and potassium iodid may be prescribed in peppermint or orange water with a little simple syrup, or in compound syrup of sarsaparilla, or elixir of taraxacum. Calomel, the practitioner's panacea, is readily taken by children in powder form with a pinch of sugar.

Cod liver oil, the almost indispensable tissue builder in all wasting diseases of childhood, is the stumbling block, Sheffield asserts, of the pharmaceutical reformer. Cod liver oil always tastes of the oil so long as there is any in the mixture. In the case of infants it is advisable to try giving cod liver oil by inunction. The majority of children can be persuaded to like the following emulsion:

℞.	Olei morrhuæ .....f. ℥iv	120
	Extracti malti	
	Syrupi calcii hypophos., (N. F.) āā...f. ℥i	30
	Glycerini	
	Pulveris acaciæ, āā.....℥ss	15
	Aquæ cinnamomi, q. s. ad.....f. ℥viii	240

Antipyretics and Antirheumatics.

The same authority declares that the best antipyretic for children is water internally and externally. If the coal-tar derivatives and salicylates are indicated they may be administered in powder form triturated with sugar to which a minute quantity of essence of peppermint may be added as flavoring. When prescribing sodium salicylate in solution its nauseating sweet taste may be disguised by a drop or two of the tincture of nux vomica.

Medicolegal

Embolism and Cause of Death—Province of Jury.

The Second Appellate Division of the Supreme Court of New York says, in the case of Kelly vs. Wills, that an employé of the defendant fell 15 or 20 feet, building stones and mortar tubs falling on him. He was taken to a hospital at once, and examination showed that his left leg was broken in two places, his right ankle was partially fractured and dislocated, and he was bruised about the body, especially on the left side thereof. He remained in the hospital about twenty-six days, when he suddenly died. The physician who had charge of the case in the course of his regular attendance at the hospital for the last fifteen or sixteen days testified that he died of embolism. Another physician, of great experience in ascertaining the cause of death, in answer to a hypothetical question, said that in his opinion the cause of death could not be told, but that it was a mere matter of conjecture, without an autopsy. Four or five other physicians testified to something of the same effect. Under these circumstances, the court says that, if it was the duty of the jury to determine the exact and definite cause of death with the scientific certainty of a physician, and if the jury were to decide that question solely on the medical testimony, it was quite true that the question was in much doubt. But the question of cause was for the jury, who were neither required to find that cause beyond a reasonable doubt, nor to find specific affliction of the heart with the certainty of medical determination, who were not bound to base their verdict on the medical testimony, and who were at liberty to disregard the opinions of the experts called by either side. And on the evidence, and in the absence of proof of any intervening efficient cause, the court thinks that there was sufficient evidence to sustain the verdict, which was that the injury was the cause of the death. They may have rejected the testimony of the defendant's experts, or they may have concluded that it was very true, from their testimony and that of the other physicians, that an autopsy was the only certain method of determining the exact cause of death; but they were not bound to be certain, or to establish a certain medical opinion, of the exact cause of the death.

Charity Hospital not Liable for Negligence—Principles Stated in Hot-Water Bottle Case Against College Hospital.

The Kansas City Court of Appeals says, in the case of Adams vs. University Hospital, in which it has denied a rehearing, that the plaintiff was a patient at the defendant's hospital, whither he had gone to have a surgical operation performed on him. While yet under the influence of an anesthetic administered for the purpose of the operation and after the performance of the operation, he was placed in the care of one or more of the defendant's nurses, who, it was charged, were not competent, and by reason thereof they permitted him to be severely burned on the legs by rubber bottles filled with hot water, whereby he was painfully and permanently injured. The defendant contended that it was a benevolent or charitable institution and as such was not liable to an action for damages caused by the acts of its employés; that, as such an institution, it was exempt from application of the doctrine of respondeat superior (the master must answer).

Now, if the defendant's liability was to be ascribed to the negligence of its nurses, the manner of the injury was such, the court says, as to authorize the rule of res ipsa loquitur (the matter speaks for itself) to be invoked. And if such liability was to be based on the negligence of the defendant in selecting competent nurses that rule would also apply. For, in either case, the injury was, of itself, a sufficient showing, unexplained, that it resulted from one or the other of these sources of negligence, and the court can see no reason why the defendant (if liable at all) should not be held to be obliged to exculpate itself by showing, in the latter instant, that it had used proper care in the selection of its nurses, as it would in the former by showing that the nurses had not themselves been negligent.

The question as presented here related to the liability of a private, or quasi private, charity for damages caused by the negligent acts of its employés, or by its own negligent act in employing incompetent employés. The court assumes that the evidence tended to show that the plaintiff was injured either by the negligence of one of the defendant's nurses or by her incompetence. If by the latter, the court assumes, for the purpose of disposing of the case, that there was enough in the record to justify a verdict that the defendant was careless in selecting her. But as, in the court's opinion, the defendant was neither liable for the negligence of one of its employés, nor for its own negligence in selecting an incompetent employé, it could make no difference which of the two acts caused the injury.

Every member of the public, the court goes on to say, is interested in the building up and maintenance of a charitable institution designed for the alleviation of human suffering, and every one may be supposed to be concerned in such institution, and to be a party to a line of action or conduct which would disable every other from doing anything which has a tendency to prevent the institution from performing the functions intended by its founder. The state itself is concerned that its citizens may be restored to health, and to that end may have places always open where those in need may obtain relief. So it may be said that any citizen who accepts the service of such institution (it making no difference whether in any special instance he pays his way) does so on the ground, or the implied assurance, that he will assert no complaint which has for its object, or perhaps the court should say, for its result, a total or partial destruction of the institution itself.

If an organization for charitable purposes founded on the bounty of others who supply funds for the purpose of administering relief to those in need of relief, and of extending aid, care and protection to those who have no one to call on by the ties of Nature, may have its funds diverted from such kindly purpose, would it not inevitably operate to close the purses of the generous and benevolent who now do much to relieve the suffering of mankind? Let us see what the practical result might be. With a view to supplying care, protection and education to dependent children without parents, some good man puts in trust for building an orphans' home the sum of $25,000, and for its perpetual maintenance the further sum of $100,000, to be put at interest or otherwise invested. The trustees may unfortunately, without proper inquiry or care, employ an incompetent servant. That servant, in the first year's existence of the home may, from ignorance, or from negligence, do, or omit to do, something causing damage which, under our liberal measure of compensation for personal injuries, would be sufficient to take up the whole fund, and thus, for a single mishap, the generous object of the donor would be thwarted, and what was intended as perpetual relief to succeeding generations of helpless children would be wiped out. That funds supporting organizations for charity can not be thus diverted, in other words, that charitable institutions or corporations are not liable for the negligence of an employé, nor for the want of care in the selection of an employé, is sustained by authority and by reason.

The question arose in England, and was decided in the House of Lords. Heriot's Hospital vs. Ross, 12 Clark & F. 507. In that case Heriot, a jeweler, by his will, in the year 1623, left a large part of his estate to certain officers of the city of Edinburgh in perpetuity for founding and maintaining a hospital for the "maintenance, relief, bringing up and education of so many poor fatherless boys, freemen's sons of that town, as the means which I give and the yearly value of the lands so purchased shall amount and come unto." The hospital was to be governed by rules formulated by a certain doctor named in the will. The rules, as framed, admitted to the hospital boys between certain ages. More than 200 years after it was founded, a boy, alleging that he was wrongfully excluded, brought his action against the feoffees (trustees) of the hospital in their official capacity, for damages. Opinions of Lords Cottenham, Brougham and Campbell are reported which are remarkable for the vigor with which they assail the proposition that the funds of a charity may be diverted to the payment of damages for malfeasance of the trustees. Lord Campbell pronounced the suggestion that persons damaged could be idemnified out of the trust fund to be "contrary to all reason and justice and common sense." He stated that there was "not any authority, not a single shred to support" such a view of the law. In reversing the decree of the lower court he further stated that "it is to be hoped that we shall never again hear of a decision like the present, contrary to reason, sense and justice." In the course of their opinions, the judges referred as authority to the case of Duncan vs. Findlater. From the fact that Duncan vs. Findlater was stated to be authority supporting the holding in Heriot's Hospital vs. Ross, and that the former was afterward overruled, the notion came to prevail, in some quarters, that the latter case was also discredited. But an examination of the cases, and others of similar character, will disclose that they belong to different classes and that the principle or foundation on which they rest is radically unlike.

In this country whatever conflict in the authorities may appear has arisen from applying rules to charities which were laid down as governing an entirely different class of cases—cases clearly involving governmental functions, or substitutes for private enterprise. It would be against every principle of right and an outrage on justice to deplete a fund set aside for perpetual charity, by using it in paying damages caused by the acts of those engaged in administering the trust. Charity funds are things apart from ordinary matters of business or trade. In the thoughts and consciences of men, charities are not loaded with the burdens put on other matters. Charity suggests different considerations and treatment from matters of ordinary business, and hence there has arisen out of the conscience, a principle which protects it in its beneficient and perpetual purpose.

To repeat a thought already suggested, every one, in the present or the future, coming within the object of a charity, has a right to the enjoyment of its benefits, and no one has a right to appropriate to himself in settlement of claims,

the fund whereby those benefits are secured. To permit it to be done would be not only setting aside the purpose of the donor, but would, in its results, allow the claim of one person to exclude the rights of all others who may come after him. It would be a matter of grave concern and regret if funds set apart for support of our charitable institutions should be made subject to the assaults of the damage claimant, and be called on, not only for compensatory recompense, but to stand for punishment in the way of exemplary damages. Especially would it strike one as unfortunate, when it is realized that such claimant has his primary right to hold to the strictest accountability the individual who does him the injury for which he makes complaint, and that in denying him the right to impoverish benevolence we do not deny him a remedy against the actual wrongdoer. So the weight of authority in this country supports Heriot's Hospital vs. Ross as being the rule which commends itself, not only because it carried out the donor's intention, but because it is more reasonable and just, and better subserves an enlightened public policy. Parks vs. University, 218 Ill. 381; Fire Ins. Patrol vs. Boyd, 120 Pa. 624; Williamson vs. Louisville Reform School, 95 Ky. 251; Perry vs. House of Refuge, 63 Md. 20; Maia vs. Eastern Hospital, 97 Va. 507; Downes vs. Harper Hospital, 101 Mich. 555; McDonald vs. Hospital, 120 Mass. 432; Benton vs. Trustees, 140 Mass. 13.

This court has found but one case, Glavin vs. Rhode Island Hospital, 12 R. I. 411, which takes ground against the view here endeavored to be set forth, and that does not do so in such pronounced way as has been said. It is there conceded (page 428 of 12 R. I.) that only the income of the institution could be held. But whatever breadth the case may be thought to have, it is learned from Parks vs. University, above cited, that the legislature of the state of Rhode Island has since nullified the effect of the decision. In the two cases last cited from the Supreme Court of Massachusetts that court, while upholding the doctrine as stated by this court, yet makes use of language in the opinions which leaves room for an inference that a liability might attach if the corporation had been negligent in selecting its surgeons in the one case and its superintendent in the other. The case of Hearns vs. Waterbury Hospital, 66 Conn. 98, 123-127, seems to concede that there would be a liability for the negligence of the employés themselves, if selected with due care. But it is manifest that, if this court should uphold a rule which would make an institution of charity liable to a patient who has been injured by an incompetent servant, negligently selected, it would destroy the principle it has endeavored to make plain, that charitable trust funds can not be diverted from the purposes of the donor. For it can make no difference, so far as the integrity of the fund is concerned, whether it be sought after by one who is injured by the negligence of a servant, or the negligent selection of such servant.

There are authorities which very properly hold that, where ship companies keep a physician on board (even though required to do so by law) to serve those who may choose to call him, he is not to be regarded as the company's servant, since his mode and manner of service is not under the control of the company. And that physicians and nurses which may be provided by railway companies at their hospitals, or the hospitals of employés, are not, for the same reason, the servants of the railroad. They are not charities, but are nothing more nor less than business associations formed for business purposes. But cases of that class do not reach the question here involved. For decisive considerations which arise in the one are not found in the other.

The hospital defendant in this case was established under a statute providing for the organization of benevolent, religious, scientific, etc., associations. Its charter provides that "the object of this association shall be to conduct and control the institution known as the 'University Hospital,' now owned and controlled by the University Medical College of Kansas City, to provide medical treatment free of charge for the poor, and to train and educate professional nurses, and to confer on them a degree." There was no stock, nor dividends, and everything realized from an income by payments from paying patients went to the improvement of the hospital and the maintenance of an equipment. Surgeons and physicians made no charge, and people who could not pay, even for board, were, by the rules, to be received free. Other places known as free institutions were furnished by the defendant with physicians, nurses and medicines gratuitously. It was true that a large body of the patients seeking relief with the defendant paid their way, some more and some less, and that the plaintiff himself was a "pay patient." But that circumstance amounted to no more than a contribution by such persons to the support of the institution. The authorities are that such circumstance does not alter the character of the institution. Downes vs. Harper Hospital, 101 Mich. 555; Parks vs. University, 218 Ill. 381; McDonald vs. Hospital, 120 Mass. 432.

Wherefore, the court holds that the defendant hospital was not liable in this action, but that the plaintiff's remedy was against those who may have inflicted the injury on him, though, if it were not a charity hospital, it would be liable to this action though such institutions were exempt.

Employés Should Give Notice of Lack of Strength.

The Court of Civil Appeals of Texas says, on the appeal of Galveston, Houston & San Antonio Railway Company vs. Bonn, a personal injury case brought by the latter party, that the jury was instructed that when a man undertakes employment and service with another, his employer has the right to assume that he is physically able to do the work which he udertakes to do, and, if he suffers from any weakness or infirmity which renders him unfit to perform the labor, then it is his duty to disclose this to his employer. If the work changes, and if he goes under the command of another foreman who does not known of the disabilities, if any, and that foreman directs him to do different and heavier work which may probably cause injury to him, it is his duty to inform that foreman of his disabilities, if any. Applying this rule of law to the facts in the case, if the plaintiff was, at the time he attempted to carry the rail in question, in a physical condition which made him susceptible to injury from carrying the ordinary burdens which men of his appearance could sustain with reasonable safety, and such physical condition, if any, was unknown to the foreman, the foreman had the right to assume that he could with safety bear such a burden. In harmony with this, the court holds that, if the plaintiff was afflicted so as to make it extra-hazardous for one in his condition to engage in lifting weights, engaging in it without notifying his foreman of his condition, would bring his conduct under the head of contributory negligence which was embraced in the charge.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

March 16.

1 *Ocular Lesions of General Arteriosclerosis. W. B. Marple, New York.
2 *Radical Mastoid Operation for Cure of Chronic Suppuration of Middle Ear. S. Oppenheimer, New York.
3 *Abortive Treatment of Pneumonia. G. L. Curtis, New York.
4 *Primary Carcinoma of Inferior Turbinate. W. W. Carter, New York.
5 *Embolism. J. N. Study, Cambridge City, Ind.
6 *Inoperable Round-Celled Sarcoma of Ovary. H. C. Coe and W. B. Coley, New York.

1. **Ocular Lesions of Arteriosclerosis.**—According to Marple, there may be a general change in the size of the arteries and veins of the eye grounds in the color of the arteries and in the caliber of the vessels (this is the most characteristic phenomenon).

2. **Radical Mastoid Operation.**—Oppenheimer believes that in the selection of cases for operation a large experience rather than rigid rules constitutes the best safeguard against

the risk of delay or of performing an unnecessary operation. The most important object of the operation is the thorough removal of all diseased tissue, and second to this, is the securing of free and permanent drainage. He considers the operation absolutely contraindicated in advanced cases of pulmonary tuberculosis and in cases of serious organic diseases.

3. **Abortive Treatment of Pneumonia.**—Curtis finds ozonation an ideal remedy for all stages and degrees of congestion, although in treating pneumonia, he does not rely on any single remedy. He has employed ozonation in 69 cases, covering all degrees of severity and all stages of the disease, with complete recovery in every instance. He claims to have demonstrated repeatedly that by the proper application of ozonation, pneumonia can be aborted at any stage, resolution becoming established within 48 hours from the beginning of treatment. This should be applied from half an hour to two hours at a time, and repeated several times daily, according to the severity of the case, but never so frequently as to interfere with a proper amount of sleep. It should be applied over the head, spine and abdomen, as well as over the congested area.

The apparatus employed consists practically of an ozone generator fed by a high-tension coil which multiplies the voltage of the commercial current a million or more times and practically eliminates all amperage. To the generator are attached brushes or corrugated wires from which ozone is given off in large quantities, and also connected with it, by means of a wire cord, is a vacuum tube through which ozone is forced into and through the body, thereby oxidizing all pathogenic products and re-establishing nutrition and vitality. Connected with this apparatus is an electric cabinet which generates light and heat coupled with ozone.

4. **Primary Carcinoma of Inferior Turbinate.**—Carter reports a case of primary carcinoma of the inferior turbinate, occurring in a woman, 38 years of age. The diagnosis was confirmed microscopically. The tumor, a typical columnar-celled epithelioma, was of five months' standing. The growth, and all the surrounding tissues in the superior maxilla were removed, and at the present, three months after the operation, there is no recurrence.

5. **Embolism.**—Study reports two cases of embolism, one of the pulmonary artery, following a comparatively trivial pelvic trouble, which terminated fatally. The second case was one of embolism of the lung, following fracture of the leg. It manifested itself on the twenty-first day after the injury and terminated in recovery.

6. **Sarcoma of Ovary.**—Coe and Coley report a case of inoperable round celled sarcoma of the ovary occurring in a woman, 32 years of age, in which treatment by the mixed toxins of erysipelas and Bacillus prodigiosus, combined later with operation, was successful; that is, the patient was restored to health for nearly two years, when she contracted pneumonia and died within a few days. In a closing note the authors state that from a recent letter received by them, there seems a possibility that there was metastasis in the lung instead of a typical pneumonia.

New York Medical Journal.

March 16.

7 *Limitations of Surgical Treatment of Uterine Fibroids. H. C. Coe, New York.
8 *General Infection by Colon Bacillus with Rapidly Fatal Septicemia and Fatal Hemoglobinemia. A. D. Blackader and B. D. Gillies, Montreal.
9 Trachoma, Clinically and Socially Considered. H. F. Hansell, Philadelphia.
10 Pathology and Symptomatology of Chronic Adhesive Pericarditis. M. H. Sicard, New York.
11 *Rhinoscleroma Treated with Roentgen Ray. M. J. Ballin, New York.
12 *Spondylitis Deformans. P. Le Breton, Buffalo.
13 *Significance of Bladder Symptoms in Relation to Some Spinal Cord Lesions. J. B. Squier, New York.
14 *Gonorrheal Joint Disease and Its Treatment. P. W. Nathan, New York.

7. **Limitations of Surgical Treatment of Uterine Fibroid.**—Coe urges that the general practitioner should be sure that the patient has a tumor before he informs her of the fact or advises an operation. He says that the whole question of uterine fibroid turns on the proper recognition of the variety, site and symptoms caused by the tumor and not on the mere presence of a growth. Furthermore, the safety of a surgical procedure does not justify its performance in a case in which the indications are not clear and well defined.

8. **Fatal General Infection by Colon Bacillus.**—Blackader and Gillies report a case of general infection occurring in a young woman, 27 years old, which supervened suddenly, while the patient was in fair health and spirits, and proceeded to a fatal termination in 48 hours. The patient was seized with severe abdominal pain, nausea and vomiting, associated with uterine hemorrhage, evidently the result of the taking of abortifacients. Cultures from the blood gave a pure culture of the *Bacillus coli communis*. It is evident, say the authors, that the abortion was followed by a colon bacillus infection of the uterus, and that this infection became general. There was an extreme amount of hemolysis which adds to the interest in the case.

11. **Roentgen Ray in Rhinoscleroma.**—Ballin reports a case of rhinoscleroma in which the treatment was limited to the use of the Roentgen ray, the result being a most satisfactory one. All the tumefied masses disappeared, although nasal respiration is not yet restored. Interesting features in this case are: its long duration, 16 years; the complete freedom from the disease of the larynx; the large size of the nose, and the failure of all other forms of treatment to give any relief.

12. **Spondylitis Deformans.**—Seven cases of spondylitis deformans are reported by Le Breton, in two of which the cause of the spinal condition was probably the toxins of tuberculosis.

13. **Significance of Bladder Symptoms in Relation to Spinal Cord Lesions.**—Squier emphasizes the necessity for a closer discrimination between urinary symptoms arising from degenerative changes in the motor or sensory center in the cord and those due wholly to organic conditions in the bladder and its adnexa. Four cases in point are cited. In one case, a diagnosis of locomotor ataxia had been made. Squier did a suprapubic cystotomy and removed two calculi. No further symptoms of the tabes were manifested. In a second case, similar to the first, 11 stones were removed from the bladder. In the remaining two cases there was definite spinal disease, but the urinary disturbances did not originate in the cord lesion.

14. **Gonorrheal Joint Disease.**—According to Nathan, proper mechanical or operative treatment of gonorrheal joint disease will nearly always succeed when all other methods have failed to give relief. Even in the more acute cases he has rarely found it necessary to resort to narcotics.

Boston Medical and Surgical Journal.

March 14.

15 *Tuberculous Scleritis, a Commonly Unrecognized Form of Tuberculosis. F. H. Verhoeff, Boston.
16 Studies in Phychopathology. B. Sidis, Brookline, Mass.
17 Relative Value of Massage, Exercises and Baths in Treatment of Heart Affections. D. Graham, Boston.
18 Pulse-Pressure Estimation. J. J. Putnam, Boston.
16 Studies in Psychopathology. B. Sidis, Brookline, Mass. Boston.
20 Ocular and General Symptoms in Nasal Obstruction. H. C. Parker, Boston.

15. **Tuberculous Scleritis.**—Verhoeff reports 13 cases of tuberculous scleritis, all of which were tested with tuberculin; 11 of the patients were admitted to the hospital for this purpose. A positive, general reaction was obtained in all cases, and a local reaction in the eye in 9. All of the patients were females; the youngest was 11 and the oldest 46 years old. The scleritis was active in one eye only, but in three cases there were corneal opacities in the other eye. With only one exception, the patients were well nourished and apparently in good health, aside from the ocular trouble. At least three of the patients several times showed exacerbations during menstrual period. All these patients were

treated with tuberculin, and the results of treatment have convinced Verhoeff that tuberculous scleritis may be regarded as a disease amenable to treatment. He says that there is no class of cases in which the use of tuberculin is more strongly indicated. He used the old tuberculin.

Lancet-Clinic, Cincinnati.

March 16.

21 *Intestinal Obstruction. H. O. Walker, Detroit.
22 Cancer: What Can Be Done for It. J. W. Carpenter, Cincinnati.
23 Curettage: Indications, Technic and Complications. J. Miller, Cincinnati.
24 Tinea Sycosis. J. V. Shoemaker, Philadelphia.

21. See abstract in THE JOURNAL, Nov. 24, 1906, page 1761.

St. Louis Medical Review.

March 9.

25 Heart Block. F. C. Fahlen, St. Louis.
26 Physiology of the Heart. E. P. Lyon, St. Louis.
27 Anatomy and Pathology of Heart Block. H. D. Senior, St. Louis.

Surgery, Gynecology and Obstetrics, Chicago.

February.

28 *Ectopia Testis Transversa. A. E. Halstead, Chicago.
29 *Treatment of Hip Disease. J. L. Porter, Chicago.
30 *Perforation of Gastric Ulcer. W. Hessert, Chicago.
31 *Rupture of Abdominal Wall. C. Kahlke, Chicago.
32 *Secondary Sarcoma. G. A. Dowling, Chicago.
33 *Multiple Aneurisms of Large Vessels. C. F. Yerger, Chicago.
34 *Operative Treatment of Wounds of the Diaphragm. E. W. Andrews, Chicago.
35 Recent Progress in Surgery of the Conjunctival Sac. W. E. Gamble, Chicago.
36 *Uterine Prolapse. F. H. Martin, Chicago.
37 *Terminations and Treatment of Extrauterine Pregnancy. A. P. Heineck, Chicago.
38 Gunshot Wounds of the Cranium. C. Adams, Chicago.
39 Pyelonephritis of Pregnancy. C. B. Reed, Chicago.
40 *Tuberculous Peritonitis in the Female. A. Bybee, Chicago.
41 *Abdominal Gunshot Wounds. E. C. Riebel, Chicago.
42 Surgery of the Abdomen. E. W. Andrews, Chicago.
43 Primary Field Dressings. P. J. H. Farrell, Chicago.
44 Gunshot Wounds of the Neck. T. J. Sullivan, Chicago.

28. **Ectopia Testis Transversa.**—In the case reported by Halstead, both testicles were found to occupy the left scrotal pouch—both having a common tunica vaginalis. The epididymes diffused from the middle third downward to the globus minor. The patient, aged 42, applied for relief from an irreducible inguinal hernia. As there was nothing to justify the removal of the testicles, they were replaced in the scrotal pouch and the hernia operation completed without transplanting the cord.

29. **Treatment of Hip Disease.**—Porter discusses more particularly the correction of late deformities incident to hip-joint disease by means of an apparatus devised by him and which is a modification of the original Bartlett machine. The procedure is described in full. Porter claims to have had excellent results from the use of this apparatus.

30. **Perforation of Gastric Ulcer.**—Hessert reports two cases in which an operation was done, both patients recovering. In one case, the perforation was closed by through-and-through sutures of silk, and over this a roll of Lembert sutures. In the other case, which simulated a carcinoma, and in which such a diagnosis was made but changed after the operation, a typical posterior gastroenterostomy was made six months after the perforation had been closed by sutures as in the first case.

31. **Rupture of Abdominal Wall.**—Two cases are reported by Kahlke. In one of them a rupture occurred in the upper right quadrant of the abdomen as the result of a fall from a third-story window. Under suitable treatment the patient recovered. The second patient was run over by a milk wagon, but no serious disturbance manifested itself until about eleven weeks after the injury occurred. The patient then noticed a lump about the size of a hen's egg near McBurney's point. Two weeks later the swelling ruptured and some pus was discharged. The mass consisted of suppurating omentum. The hernia had evidently occurred as the result of a partial rupture of the aponeuroses of the external oblique and a localized rupture of the muscular portion of the internal oblique and transversalis muscles. There was no sac. This patient also recovered.

32. **Secondary Sarcoma.**—Dowling reports a case of sarcomata of the lungs and pleuræ secondary to sarcoma of the tibia.

33. **Multiple Aneurisms of Large Vessels.**—Among 85 cases of aneurism of the heart and aorta, or other large vessels seen in the postmortem room of Cook County Hospital, 8 cases were found in which the aneurisms were multiple. Yerger adds one case recently observed by him in which he found three sacculated aneurisms of the arch of the aorta and of the abdominal aorta.

34. **Wounds of Diaphragm.**—Andrews reports two cases. One was a case of diaphragmatic hernia brought about by a blow on the abdomen, which terminated quickly in death. The second case was one of recovery by operation from a stab wound of the lung, diaphragm and stomach. In this case it was difficult to suture the diaphragm, and the expedient was adopted of making a transpleural exclusion by one or two deep loop or mattress stitches which extended through the intercostal space, across into the peritoneum and through the diaphragm. In this way the thin edge of the pleural cavity, as well as the two wounds, were occluded, the lung having receded. The rushing of air at once ceased when the stitches were tied.

36. **Uterine Prolapse.**—Martin reviews the surgical treatment of uterine prolapse and describes an operation devised by him in which he utilizes the ligaments of the uterus in supporting the upper diaphragm. The operation is said to be applicable to women, who have passed the child-bearing period, and in whom there is no objection to the removal of the uterus.

37. **Extrauterine Pregnancy.**—Heineck presents a very complete summary of the clinical history of extrauterine pregnancy, and embodies a report of 32 cases, seen at Cook County Hospital. In this series there was only one death. In this case the abdomino-vaginal route was employed. The abdominal route was employed in 30 cases, and the vaginal route in one case. All these cases terminated favorably. Signs of pregnancy were noted in about half the cases. The youngest patient was 18 years old; the oldest was 42. Fifteen cases occurred between the ages of 20 and 30. Pain in the lower abdominal region, menstrual irregularities and a palpable mass in one or the other fornix or in both fornices, were present, respectively in 30, 28 and 31 cases. Heineck believes that these three symptoms are highly suggestive of ectopic gestation.

40. **Tuberculous Peritonitis.**—Of 30 cases of tuberculous peritonitis, collected by Bybee from the postmortem records of Cook County Hospital, 28 were in the male and 2 in the female. He concludes that peritoneal tuberculosis is from two to four times as frequent in the male as in the female; that the genital tract of the female is not a factor in the etiology of peritoneal tuberculosis, and that the genital tract of the female furnishes a degree of immunity to peritoneal tuberculosis above that of the male.

41. **Abdominal Gunshot Wound.**—Riebel analyzes 28 cases of gunshot wounds of the abdomen, the history of each case being given in full.

Annals of Surgery, Philadelphia.

February.

45 *Sequestration Anemia in Brain and Skull Surgery. R. H. M. Dawbarn, New York.
46 *Papillary Cystadenomata of Breast. R. B. Greenough, Boston, and C. C. Simmons, Cambridge, Mass.
47 *Puerperal General Peritonitis. E. McDonald, New York.
48 *Subacute Perforation of Stomach and Duodenum. B. G. H. Moynihan, Leeds, England.
49 *Large Number of Foreign Bodies in Stomach. A. E. Benjamin, Minneapolis.
50 *Sarcoma of Small Intestine and Mesentery. G. Barling Birmingham, England.
51 *Congenital Lumbar Hernia, at Triangle of Petit. C. N. Dowd, New York.
52 *Tuberculosis of the Bladder. G. Walker, Baltimore.
53 *Recurrent Intermittent Retention of Urine Occurring with the Remissions in Pernicious Anemia. J. H. Cunningham, Jr., Boston.
54 *Arthroplasty on the Elbow Joint. C. L. Scudder, Boston.

45. **Sequestration Anemia in Brain Surgery.**—Dawbarn claims that with entire safety one can withdraw into the limbs some quarts of blood; that is, sequestrate before operation and retain in the limbs by cordage enough fluid to make a striking difference in loss of blood from the field of operation; enough, as Dawbarn has convinced himself, to constitute in many cases the difference between life and death, between shock and absence of shock, in a gravely severe case. This temporary bleeding is controlled as to degree by the finger on the pulse. The sequestration proceeds until there is plainly noticeable softening and lessening of tension. At this point begins the operation, and every cut vessel spurts less than otherwise would be the case. A towel folded lengthwise is wrapped about each thigh very close to the trunk and on this the rubber tube is tightened. After from five to ten minutes the softened pulse will indicate that the operation may be proceeded with. The congested limbs are, however, first warmly wrapped up and hot-water bags placed about them. Only in case the limbs are excessively swollen, or the pulse demands a change, is the tension altered during the operation. Dawbarn reports five cases of brain and skull surgery in which this method was employed with the greatest satisfaction. Less of the anesthetic is needed; hemorrhage during the operation is controlled easily, and, as stated before, there is lessened danger of sudden death. No mean advantage is the greater space obtained between brain and brain case, thus lessening the risk of laceration of the brain surface.

46. **Papillary Cystadenomata of the Breast.**—Greenough and Simmons analyze 20 recorded cases of papillary cystadenomata of fibro-epithelial tumors of the breast.

47. **Puerperal General Peritonitis.**—McDonald reports 11 cases in which the streptococcus was the infecting organism alone in 3 and associated with other bacilli in 3 cases. The *Staphylococcus aureus* alone was the infecting organism in 2 cases; the pneumococcus in one case, and the gonococcus alone in one case and associated in one case.

48. **Subacute Perforation of Stomach and Duodenum.**—Moynihan has operated on 15 patients; on 5 during the early stage, on 10 after the lapse of months or years. In 4 cases an hour-glass stomach was found. A correct diagnosis was made and without difficulty in every case. Moynihan says that if the patient is seen at the time of the onset of perforation, there need be no hesitation in advising instant operation. All the cases are reported in full.

49. **Foreign Bodies in Stomach.**—Benjamin reports the case of a professional glass and nail-eater who had followed this vocation for twenty years without any mishap. While walking on the street he was taken suddenly with severe pain across the stomach and in the region of the heart. He vomited considerable matter of a black color, which tasted like iron rust. The stools were also black in color. There was a feeling of weight in the stomach, pain on breathing, and a sensation of some object in the stomach. Fifty-two 6, 8, 10, and 20-penny-nails were removed from the sacculated cardiac end of the stomach. They were in various stages of erosion, two being like darning needles. The walls of the stomach were hypertrophied and fibrous and showed scars of healed ulcers. The stomach was greatly dilated. The patient left the hospital on the ninth day feeling perfectly well, and has remained so.

50. **Sarcoma of Small Intestine.**—A case of round-celled sarcoma of the small intestine is reported by Barling. The patient was a boy, six years of age. Six feet and five inches of the small intestine were removed close to the ileocecal valve, and an ileocolic anastomosis was made. The patient made an uneventful recovery.

51. **Congenital Lumbar Hernia.**—Dowd reports a case of this kind which was first noted when the patient was three and one-half years old. The hernia was about the size of a goose egg and bulged in a marked way on coughing or on exertion. The triangle of Petit was greatly enlarged. The sac of the hernia was distinct. Its contents consisted of colon and appendix. There was no recurrence of the hernia after eight months.

52. **Tuberculosis of Bladder.**—In the preparation of this paper Walker studied 447 cases of tuberculosis of the bladder collected from the literature and elsewhere. His conclusions are to appear in a subsequent paper.

53. **Recurrent Intermittent Retention of Urine.**—The interest in Cunningham's case is the recurrent intermittent retention of urine dependent on remissions or exacerbations of anemia in the course of a pernicious anemia. The case also illustrates the value of the Bottini operation in affording relief to prostatic obstruction by incising the obstructing portion of the gland in a class of cases which will not stand a general anesthesia or the shock and convalescence attending prostatectomy.

54. **Arthroplasty on Elbow Joint.**—One year and four months following the operation in the case reported by Scudder, the man had a strong and useful arm with which he is able to do all the work about a small farm. There is no pain and no discomfort and only a small amount of limitation of motion. A rectangular skin flap taken from the posterior surface of the upper arm was swung into the joint and placed between the ends of the exposed bones. The flap covered the lower end of the humerus and sigmoid cavity of the ulna and the upper end of the radius. The wound was not drained. Gentle passive motion was given at the end of about ten days.

Wisconsin Medical Journal, Milwaukee.

February.

55 *Nervous and Mental Diseases in General Practice. R. Dewey, Wauwatosa, Wis.
56 *Open air Treatment of Pneumonia. A. J. Patek, Milwaukee.
57 Those Who May Be Classed as Feeble-Minded. A. W. Wilmarth, Chippewa Falls.
58 *Endometritis. J. M. Evans, Evansville, Ind.
59 Membranous Colitis, Mucus or Mucomembranous Colitis and Desquamating Colo-proctitis. L. Hopkinson, Milwaukee.

55.—See abstract in THE JOURNAL, July 14, 1906, page 145.

56. **Open Air Treatment of Pneumonia.**—This treatment of pneumonia in children is endorsed fully by Patek, and he reports three cases in which it was employed successfully.

58.—See abstract in THE JOURNAL, July 14, 1906, page 144.

Pennsylvania Medical Journal, Athens.

February.

60 *Laryngology. I. J. Dunn, Erie.
61 Electricity in Treatment of Disease. J. V. Shoemaker, Philadelphia.
62 *High-Frequency Current in Pulmonary Tuberculosis. M. L. Barshinger, York.
63 *High-Frequency Currents in Chronic Rheumatism and Rheumatoid Arthritis. G. E. Pfahler, Philadelphia.
64 *Intranasal Conditions as Bearing on the Etiology of Diseases of the Ear. G. Hudson-Makuen, Philadelphia.
65 *Plea for Creation of a State Hospital for Inebriates and Drug Habitués. T. Diller, Pittsburg.
66 *Internal Use of Saline Solution in Fever. J. M. Taylor, Philadelphia.
67 Hepatic Insufficiency. W. H. Glynn, Pittsburg.
68 Subperitoneal Myxo-Sarcoma Simulating a Sciatic Hernia. N. G. L. Shillito, Allegheny.
69 Five Interesting Neurologic Cases. T. Diller, Pittsburg.

60.—See THE JOURNAL, Oct. 6, 1906, page 1131.

62. **High-Frequency Current in Tuberculosis.**—As the result of careful observation of the effects produced by the treatment of four cases of pulmonary tuberculosis with the high-frequency current, Barshinger is of the opinion that the current stimulates, increases, and maintains the metabolism of the body, securing a reversal of the progressively lowered metabolism which takes place in tuberculosis. The pulmonary circulation is also improved, and thus the congestion and inflammation in the lung tissues are relieved. Barshinger advises, however, that careful attention must be given to the diet and hygiene of the patient. He reports in great detail the clinical entity of one of his patients, and refers briefly to three other cases.

63. **High-Frequency Currents in Rheumatism.**—Pfahler says that in chronic rheumatism the high-frequency currents give

relief from the pain and stiffness in the joints, increase metabolism and improve the circulation of the part, thus helping to remove the exudate and to restore function. Brief mention is made of an illustrative case.

64.—See abstract in THE JOURNAL, Oct. 6, 1906, page 1132.

65.—See abstract in THE JOURNAL, Sept, 29, 1906, page 1048.

66.—See abstract in THE JOURNAL, Nov. 10, 1906, page 1551.

Archives of Pediatrics, New York.

February.

70 *Importance of the Estimation of Caloric Value of Infant Food. J. J. Thomas, Cleveland.
71 *Determination of the Caloric Value of Modified Milk. G. W. Moorehouse, Cleveland.
72 *Impaired Resonance Behind and Beneath the Inner Third of the Left Clavicle in Normal Children. S. McC. Hamill, Philadelphia.
73 Significance of Albumin and Casts in the Urine in Children. F. E. Sondern, New York.
74 *Scarlet Fever or Fourth Disease (Filatow-Dukes), Which? H. Illoway, New York.
75 Acute Alcoholism in Children. S. W. Moorhead, Philadelphia.
76 *Treatment of Whooping Cough by Abdominal Belt. T. W. Kilmer, New York.

70. **Estimation of Caloric Value of Infant Food.**—Thomas says that the estimation of the food requirement of the infant and the caloric value of infant foods is of the highest importance, not only for the purpose of establishing infant feeding on a scientific basis, but also to guard against overfeeding.

71. **Id.**—Moorhouse describes a method for determining the caloric values of milk mixtures which he has employed successfully.

72. **Impaired Pulmonary Resonance in Normal Children.**—Hamill maintains that there exists in the chests of the majority of infants and children in perfect health impaired resonance behind and beneath the inner third of the left clavicle, and that this persists throughout childhood. It can be elicited by percussion of the clavicle and by percussion in the first interspace immediately beneath the clavicle, the child being in the recumbent position, although sometimes the findings are more distinct when the child is in the upright position.

74. **Scarlet Fever or Fourth Disease?**—Attention is directed by Illoway to four cases seen by him in which the diagnosis was somewhat doubtful as to whether they were cases of scarlatina or the so-called fourth disease.

76. **Treatment of Whooping-Cough.**—In this article Kilmer states that in the three years which have elapsed since he first announced his treatment of whooping cough with an abdominal belt, the recorded cases show conclusively that about 95 per cent. of cases are positively benefited. This is especially true, he asserts, in regard to the cessation of vomiting. The belt first described by Kilmer in THE JOURNAL A. M. A., Dec. 10, 1904, was composed of a long strip of elastic webbing placed over a stockinette band; this, while efficacious, was warm to the child and expensive for the parents. The new belt described by Kilmer in this article is made of linen with a strip of silk elastic webbing two inches wide inserted on either side. The belt laces in the back and is worn over the undershirt or band. The width of the belt for infants is from four to five inches, and for older children from five to eight inches. Its length should be such that when complete it will measure three inches less than the circumference of the abdomen at the navel. The degree of constriction should be determined in the individual case.

Therapeutic Gazette, Detroit.

February 15.

77 *Medical Management of Pregnancy. E. P. Davis, Philadelphia.
78 *Hygiene and Management of Pregnancy. G. M. Boyd, Philadelphia.
79 *Management of Pregnancy. R. C. Norris, Philadelphia.
80 *Management of Normal Pregnancy. B. C. Hirst, Philadelphia.
81 *Artificial Feeding of Infants in Private Practice. M. H. Fussell, Philadelphia.
82 *Clinical Significance of Variations in Blood Pressure. H. A. Hare, Philadelphia.

77. **Medical Management of Pregnancy.**—Davis discusses the care of the pregnant woman in all particulars, except such as may demand operation, including the diagnosis of early pregnancy, and the preparation of the patient for labor.

78. **Id.**—Boyd covers practically the same ground in his paper as was considered by Davis. He urges that the physician should familiarize himself thoroughly with all the features of each case so that when labor begins he will be prepared properly to meet any emergencies that may arise.

79. **Id.**—Norris emphasizes the importance of frequent careful and thorough examinations of the urine in connection with the management of pregnancy. He also publishes a full list of articles which the mother is instructed to have in readiness after the seventh month of pregnancy. He says that because the physician ordinarily does not often meet with serious complications is no reason why he should not study each case thoroughly.

80. **Id.**—Hirst says that the chief danger to the pregnant woman is from toxemia; therefore, everything possible should be done to secure perfect elimination. The urine should be examined often.

81. **Artificial Feeding of Infants.**—Fussell is satisfied from personal experience that a modification of milk is practical for feeding infants. He favors the formula proposed by Rotch and Holt.

82. **Variations in Blood Pressure.**—Hare emphasizes the fact that in some conditions the tension which is above normal is not rarely present in moderate degree as an endeavor on the body to meet a need, and that sometimes a moderate degree of hypotension is in one sense physiologic in some illnesses, and should not be interfered with. The physician who whips up the circulation at this time solely because the tension is low, forces his patient to an expenditure of energy which is wasteful and dangerous. Hare claims that only when overaction of the heart is due to low tension, or when renal or pulmonary stasis results from this cause, is interference required. It is unwise, he declares, to give drugs to the patient simply because the arterial tension is high or low.

Archives of Ophthalmology, New York.

November.

83 *Prevention and Treatment of Eye Affections from Venereal Disease. H. Knapp, New York.
84 Dependence of Accommodation and Motility on Refraction of the Eye. H. Knapp, New York.
85 *Sudden Blindness Following Suppurative Conditions About the Eyeball. A. Knapp.
86 Double Congenital Aniridia with Glaucoma and Cataract. D. N. Dennis, Erie, Pa.
87 *Rare Path of Infection of an Orbital Abscess. C. Barck, St. Louis.
88 Atrophy of the Iris. A. Franck, Germany.

83. **Eye Affections from Venereal Disease.**—Knapp's paper is an address delivered before the Philadelphia Society for the Study and Prevention of Social Disease. In it he discusses briefly what is known of the ocular complications and sequelæ of gonorrhea and syphilis.

85. **Blindness Following Suppuration About Eyeball.**—That sight is occasionally suddenly lost when there is an acute suppurative process in the neighborhood of the orbit is shown by Knapp. The orbital symptoms are those of cellulitis of varying intensity, and the ophthalmoscopic picture is that of an embolism of the central retinal artery with consecutive optic atrophy and obliteration of the arteries. Three cases in point are reported: (1) Blindness following an operation for empyema of the frontal sinus; (2) blindness following periostitis of the superior maxilla of dental origin, and (3) blindness from penetrating wound of orbit with cellulitis.

87. **Rare Path of Infection of Orbital Abscess.**—Barck reports the case of a boy who was hit on the temple by a stone. Two days later high fever set in; on the third day the upper lid commenced to swell, and on the fourth day he was unable to open the eye. The boy became comatose and delirious. An operation was decided on and this led to the discovery that the infection from the temple wound had extended through an emissary vein into the orbit and from there to the meninges, which accounted for the symptoms manifested.

Southern California Practitioner, Los Angeles.

February.

89 *Review of 700 Cases of Smallpox. I. R. Bancroft, Los Angeles, Cal.
90 Shock in Relation to Surgical Procedures and Anesthesia. T. G. Davis, Los Angeles, Cal.
91 Health and Development of School Children. G. L. Leslie, Los Angeles.

89. **Smallpox.**—Bancroft reports on 700 cases of smallpox seen by him during an epidemic which occurred in Boston in 1901. Of the total number of cases, 18 per cent. occurred in patients under 5 years of age, while only 3 per cent. of the patients were between 6 and 10 years. The next largest number of cases, 114, occurred in individuals between the ages of 26 and 30. All the patients under the age of 10 showed either no vaccination or a doubtful one. As the effect of compulsory vaccination wears off the number of cases gradually increases, which accounts for the 16 per cent. occurring between 26 and 30 years. These cases further showed that a fatal case of variola does not occur after a recent successful vaccination, and that vaccination also has an effect on the length of sickness. On analysis of the cases that terminated fatally and in which vaccination was established, it was found that the youngest patient was 28 years old, and the average was 47 years. The 8 per cent. of mortality in these cases compares favorably with the 26 per cent. mortality among the unvaccinated. Bancroft affirms his belief in the absolute power of vaccination to prevent smallpox.

Bulletin of the Johns Hopkins Hospital, Baltimore.

February.

92 Trachoma in the American Negro. J. Bordley, Baltimore.
93 Four Cases of Membranous Dysmenorrhea. E. Morse, Baltimore.
94 The Medical Life of Oliver Wendell Holmes. J. H. M. Knox, Jr., Baltimore.
95 *The Blood in Pernicious Anemia. C. P. Emerson, Baltimore.
96 Volume and Color Index of the Red Corpuscles. P. Wroth, Jr., Baltimore.
97 *Pulsating Empyema. W. J. Calvert, Columbia, Mo.

95. **Blood in Pernicious Anemia.**—A careful study of 89 cases of pernicious anemia was made by Emerson from the viewpoint of the blood. The results are presented in such detail as to preclude the making of an abstract.

97. **Pulsating Empyema.**—Calvert presents additional experimental results obtained by him in the study of this condition.

Fort Wayne Medical Journal-Magazine.

98 *Have We a Specific for Typhoid. J. L. Gilbert, Kendallville, Ind.
99 *Multiple Invaginations of the Bowel. D. C. Wybourn, Sheldon, Ind.
100 *Terminations and Treatment of Extrauterine Pregnancy. A. P. Heineck, Chicago.

98. **Specific for Typhoid.**—Gilbert suggests as a specific for typhoid the administration of one grain of sulphate of copper every four hours for, perhaps, three days.

99. **Multiple Invaginations of Bowel.**—Wybourn reports the case of a girl, 6 years old, who suffered from sudden and severe attacks of abdominal pain, accompanied by persistent vomiting. An operation having been decided on, in order to reduce a supposed intussusception, the abdomen was opened, but instead of finding an intussusception there were discovered three enteric invaginations, each about one and one-half inches deep, without inflammatory adhesions. The invaginations were reduced and the patient made a complete recovery.

100.—This article also appeared in Surgery, Gynecology and Obstetrics, February, 1907. See abstract in this issue of THE JOURNAL, paragraph 36, page 1138.

American Journal of Surgery, New York.

March.

101 Cancer of the Uterus, with Special Reference to Wertheim's Operation. M. I. Rosenthal, Fort Wayne, Ind.
102 Rational Treatment of Fever in the Puerperium. S. M. Brickner, New York.
103 Combination of the English and French Obstetric Locks, for the Prevention of Dangerous Compression of Fetal Head by Forceps. A. E. Gallant, New York City.
104 Blood Examination in Surgical Diagnosis. I. S. Wile, New York.
105 Surgical Postures. M. W. Ware, New York.
106 Immediate Correction of Congenital Club-Foot. E. W. Ryerson, Chicago.

Albany Medical Annals.

March.

107 The New Ellis Hospital. C. G. McMullen, Schenectady, N. Y.
108 Present Status of Bier's Method of Treatment by Congestive Hyperemia. J. M. Berry, Troy.
109 Inebriety Should Be Studied in Medical Colleges. T. D. Crothers, Hartford, Conn.
110 Diet in Diseases of Children. W. G. Murphy, Hartford.

The Journal of the Outdoor Life, Trudeau, N. Y.

March.

111 Tuberculosis Congress. L. F. Flick, Philadelphia.
112 What Shall Our Tuberculosis Patients in the Southwest Do When Summer Rolls Around? W. Freudenthal, New York.
113 Outdoor Life as It Goes On, Summer and Winter, in the California Fastnesses. C. H. Shinn, California.

Mississippi Medical Monthly, Vicksburg.

March.

114 Treatment of Cystitis. T. J. Ray, Deeson.
115 Obstetrics. W. H. Barnes, Homewood.
116 Nosebleed. S. L. Barnett, Arnold.
117 Curettage Under Cocain Anesthesia. E. A. Cheek, Arcola.

Annals of Gynecology and Pediatry, Boston.

February.

118 Ectopic Pregnancy. H. F. Quackenbos, New York.
119 Methods of Feeding at the Boston Floating Hospital. J. K. Wardwell.

Phillippine Journal of Science, Manila.

January.

120 Comparative Ecology of San Ramon Polypodiaceæ. E. B. Copeland.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

British Medical Journal.

March 2.

1 *Idiopathic Dilatation of the Colon. H. P. Hawkins.
2 *Case of Enterospasm. E. O. Ashe.
3 *Simple Colonic Adhesions a Cause of Intermittent Attacks of Abdominal Pains. A. E. Maylard.
4 *Operations for Removal of Malignant Growths from the Nasopharynx. F. Eve.
5 *Trypsin in Cancer. W. S. Bainbridge, New York.
6 *Influenza Commencing with Sudden Unconsciousness and Excessive Dyspnea. W. Harris.
7 *Cystine Calculi. F. A. Southam.
8 Kala-azar. L. Rogers.
9 *Treatment of Eczema. H. Waldo.
10 *Obstruction of Esophagus. D. McKenzie.
11 *Antistreptococcic Serum in Puerperal Fever. E. W. Smyth.
12 *Foreign Body in Appendix. E. J. W. Porter.

1. **Idiopathic Dilatation of Colon.**—The clinical history of this condition is illustrated most effectively by Hawkins in the recital of nine cases, occurring in patients ranging in age from three weeks to 48 years. He says that the difficulty lies in distinguishing the early stage of this condition from a simple constipation and in recognizing the point at which the case must pass from physician to surgeon. The picture of the condition comprises: 1. A history of constipation from birth or from the earliest recollection, which is compatible, however, with fairly good health, until the final stage is at hand, the first sign of failure being often a loss of weight. 2. A constipation which often alternates with diarrhea, and which at its worst is unlike that of obstruction, inasmuch as flatus is often passed and fecal matter may be drained away through a rigid rectal tube. 3. Abdominal enlargement, variable or constant, often asymmetrical, with prominence in the left iliac region, the abdomen, though distended, being seldom tense, and often surprisingly flaccid, and rarely presenting any impairment of resonance. 4. Slow alterations in shape, especially in the left iliac region, observable only with patience, quite unlike the tense peristalsis seen in real obstruction. 5. The absence or rarity of pain and vomiting. Neither with real intestinal obstruction nor with simple non-dilating constipation should there be any confusion when this condition is far advanced.

2. **Enterospasm.**—Ashe reports a case of enterospasm occurring in a strong, healthy woman, aged 22. At the operation it was found that the small intestine was very much narrowed for about seven inches of its length. There was no gradual tapering of the wide into the narrow part, but at the end of the narrow part the natural-sized bowel abruptly became contracted, and at the other resumed its natural caliber just as abruptly. The narrow part was

firmly contracted, but was to some extent pervious. The contracted part was covered with warm cloths while a further search was made for other causes of the spasm. Nothing was found, however, but on removing the cloths from the contracted part it was found to have resumed its normal appearance and size. The bowel was returned to the abdominal cavity without further intervention. The patient made a perfect recovery.

3. **Colonic Adhesions as Cause of Abdominal Pains.**—Maylard reports two cases, both occurring in women, in which simple colonic adhesions were responsible for severe attacks of abdominal pain. In one case, the symptoms suggested chronic appendicitis. Operative intervention afforded complete relief in both cases. Maylard suggests that the pain was caused more particularly by the dragging effects produced by the adhesions which interfered with the normal peristaltic action of the bowel.

4. **Removal of Malignant Growths from Nasopharynx.**—Eve describes several operative procedures which he has devised and employed with success. On two occasions he carried out a method of osteoplastic resection of the upper jaw, which completely preserves the integrity of the jaw and at the same time admits of the fullest exposure of the nasopharynx and upper and back part of the nose. A ligature is placed on the external carotid artery and laryngotomy is performed. An incision is made, extending from the angle of the mouth to the lower margin of the malar bone, at a point corresponding to the anterior end of the masseter. The parotid duct is separated at its entrance into the mouth by a circular incision and is then turned back. The malar bone is divided by introducing Gigli's saw through the sphenomaxillary fissure. The muco-periosteum of the hard palate having been divided in the median line the hard palate and alveolus are also severed by a Gigli saw which has been drawn through from the mouth by an aneurism needle passed along the inferior meatus and through a puncture at the junction of the hard and soft palates. The soft palate is severed from the hard, from the middle line as far as the posterior margin of the alveolus. A broad and blunt chisel is then driven horizontally between the tuberosity of the upper jaw and the pterygoid processes. By pressing the handle backward the upper jaw is levered out of its bed and turned upward and forward. As the skin incision is only carried as high as the lower level of the malar bone, the fibers of the facial nerve going to the orbicularis oculi are not divided. After removal of the growth the maxilla is replaced and the severed edges of the malar bone united by a wire suture. A piece of thin silver wire may also be passed round the incisor teeth on each side of the incision through the alveolar process anteriorly. The incision between the hard and soft palates and the two halves of muco-periosteum of the hard palate are sutured. The end of the parotid duct is thrust into the mouth and secured in position by a point of catgut suture. Finally the skin incision is closed.

5. This article appeared in the *New York Medical Journal*, March 2, 1907, and was abstracted in THE JOURNAL, March 16, 1907, page 974.

6. **Unusual Onset of Influenza.**—Harris reports the case of a man who had three attacks of influenza in the course of fifteen years, each attack commencing with sudden unconsciousness, lasting about 20 minutes, and followed by fever, severe headache, pains and bronchitis.

7. **Cystine Calculi.**—Southam reports one case of cystine calculus of the kidney and one of the bladder, the latter being the only instance of its kind seen by the author in a series of 140 cases. The stone in the bladder was removed by suprapubic cystotomy. The renal calculus was passed through the urethra.

9.—An abstract of this article appears in the Therapeutic Department of this issue, page 1133.

10. **Obstruction of Esophagus by a Pea.**—McKenzie reports a rather curious case of obstruction of the esophagus. There was no dyspnea, no cough, and no spasm, but the patient was unable to get anything beyond the obstruction. The patient's story was that she put a dried pea into her mouth and it suddenly slipped over, giving rise to a violent choking. The woman also had an aneurism of the innominate artery and it was presumed that the pea was arrested at the place where the aneurism was pressing on the esophagus. It was possible to pass a catheter past the obstruction, but all food or drink that was taken was regurgitated. A quart of milk was run in through the catheter, and after the withdrawal of the instrument the patient vomited and ejected the pea. The foreign body had evidently been resting at the upper end of the narrowed portion of the gullet, where it lay loose, but in such a manner as to act like a ball valve. Its small size and spherical shape had prevented the usual esophageal regurgitant movements from seizing the body and passing it upward.

11. **Antistreptococcus Serum in Puerperal Fever.**—Smyth reports a case of puerperal fever occurring in a primipara in which the injection of three doses, 10 c.c. each, at 12-hour intervals, of a polyvalent antistreptococcus serum was followed by immediate recovery.

12. **Foreign Body in Appendix.**—In the case reported by Porter it was found at the operation that the attack of appendicitis in all probability was due to the presence in the lumen of the appendix of three grains of No. 6 shot. The patient, a soldier, stated that rabbit pie formed a frequent dish in his mess. Evidently a shot had found its way into the intestinal tract by this means.

The Lancet.

March 2.

13 *True Aim of Medical Education and Evil of the Examination Fetish. L. E. Shaw.
14 *Faints and Fainting. W. S. Gowers.
15 Kala-azar. L. Rogers.
16 *Insanity, wth Special Reference to Prognosis. A. R. Urquhart.
17 *Uterine Fibroids. A. E. Giles.
18 *Intestinal Obstruction in Children. E. P. Baumann.
19 Case of Pneumococcal Cerebrospinal Meningitis Simulating Spotted Fever. A. H. Cook and G. F. McCleary.

13. **True Aim of Medical Education.**—Shaw directs attention to the blighting influence of the examination system on the work of teachers and pupils from beginning to end of the modern medical curriculum. He maintains that the examination fetish, as he calls it, is year by year gaining a greater hold on medical education; that its influence is detrimental, and that it has a demoralizing effect. He says that one of the worst features of examinations is their tendency to be so conducted as to require the knowledge of an increasing number of facts from succeeding batches of victims. By a careful study of the examination papers and of the ways of particular examiners a teacher gradually learns to pack his pupils' brains with facts with so much regard to the ease of unpacking that the success of the dullest can be almost assured. Shaw advocates replacing the examination system by intelligent inspection.

14. **Faints and Fainting.**—Gowers emphasizes the fact that the functional state of the brain in syncopal unconsciousness is distinct from the failure of the blood supply that causes it, and may be nearly the same as that which occurs in epilepsy, apart from the state of the circulation. He also directs attention to the uncertainty regarding the precise mechanism through which heart failure is induced and to the occasional causal relation of syncope to epilepsy.

16. **Insanity.**—Although Urquhart regards the pathologic forms of insanity as of little moment in respect to prognosis under present conditions, as fixed, irrecoverable and already doomed, he regards ordinary insanity as uncertain, curable and now even hopeful.

17. **Uterine Fibroids.**—The basis of Giles' paper is a consecutive series of 150 cases of fibroid of the uterus treated by abdominal section. Over half the total number of cases occurred between the ages of 40 and 50; four occurred in patients under 30, and two in patients 60 years old and over. Of the 150 patients operated on 56 were unmarried and 94 were married. Of the latter, 34 have never been pregnant.

Fifty-seven patients had had between them 172 pregnancies, 38 of which terminated in miscarriages. Giles rather inclines to the belief that the absence of pregnancy predisposes to the occurrence of fibroids. He suggests that the modus operandi may be that the periodic congestion of the uterus in the preparation for this function expends itself, if continually thwarted, in pathologic, irregular and permanent, instead of physiologic, uniform and temporary hypertrophy. After the menopause, when periodic congestion no longer occurs, the liability to the onset of fibroids ceases. Hemorrhage, pain, abdominal swelling and pressure symptoms are the most prominent indications for operation. Abdominal myomectomy was done 27 times in Giles' series, abdominal hysterectomy 109 times, panhysterectomy 11 times and oöphorectomy 3 times.

18. **Insatnity.**—Although Urquhart regards the pathologic reported by Baumann was of acute intussusception, which was reduced by manipulation. The second case was also one of intussusception but simulated dysentery. A diagnosis of dysentery was made and appropriate treatment instituted. On the ninth day the attending physician performed a laparotomy and the intussusception was discovered. The patient died two hours after; the intussusception in this case was incomplete. The diagnosis in this case was complicated by the fact that another child of the same family, at about the same time, passed blood-stained stools.

Australian Medical Gazette, Sydney.

January 21.

20 The Medical Ideal. A. J. Turner.
21 Precipitin Reactions in Relation to State Medicine and Public Health. D. A. Welsh and H. G. Chapman.
22 *Fibroid of the Uterus Weighing 19 Pounds Removed from a Patient Aged 70. W. J. S. McKay.
23 *Streptothrix Infections, with Special Reference to the Pulmonary Form. S. Jamieson.
24 *Aspects of Spinal Anesthesia. F. Hinrichsen.

22. **Fibroid of Uterus.**—McKay's patient lost no blood whatever; she exhibited no signs of shock. The tumor, when bisected, proved to be an enormous submucous polypus which had grown from the fundus and had gradually distended the uterus and cervix, so that they were represented by a thin envelope of tissue which could be stripped off the polypus with ease.

23. **Streptothrix in Infections.**—James reports a case which illustrates the points of importance in differentiating between these cases and those of ordinary pulmonary phthisis. In streptothrix infections the lesion is more commonly situated in the base of the lung, whereas in phthisis it is the apex that is most frequently infected. In streptothrix infections the disease always tends to spread by direct continuity, irrespective of anatomic boundaries, and so in course of time ulceration through to the surface takes place, as in the case just reported. Excavation of the lung tissue does not occur to any extent, but rather a consolidation with infiltration by the *Streptothrix granulomata*. As a consequence thereof hemoptysis was a marked feature. Pleuritic pain was not a marked phenomenon. Temperature is more irregular in type in streptothrix infections than in ordinary phthisis, and is, as a rule, of lower range. James emphasizes the fact that in all cases of chronic pulmonary affection in which the physical signs are suggestive of phthisis, but in which examinations of the sputum on several occasions fails to reveal the presence of tubercle bacilli, the sputum should be stained by Gram's method and a systematic hunt made for filaments of a streptothrix.

24. **Spinal Anesthesia.**—Hinrichsen says that spinal anesthesia is still in the experimental stage and can not, therefore, be recommended for general use.

British Journal of Tuberculosis, London.

January.

25 Study of Tuberculosis: a Retrospect. C. Allbutt.
26 An Anticipation. R. W. Philip.
27 Care and Control of the Consumptive Poor in the British Isles. R. D. Powell, B. Bramwell and J. W. Moore.
28 Tuberculosis and National Efficiency. L. Brunton.
29 Climate as a Factor in Treatment of Tuberculosis. H. Weber.
30 The Combat with Consumption; a Contrast. S. Wilks.
31 Treatment of Hemoptysis by Amyl Nitrate. F. Hare.

Indian Medical Gazette, Calcutta.

February.

32 The Distribution of Two Species of Bedbug. W. S. Patton.
33 The Carbuncular Form of Plague. G. N. Mittra.
34 Surgical Treatment of Chronic Dysentery. E. F. G. Tucker.
35 Use of Adrenalin in Plague. K. B. N. H. Choksy.
36 Conservancy of the Smaller Towns in Burma. J. Entrican.
37 Extraction of Cataract in the Capsule. H. Smith.

Presse Médicale, Paris.

38 (XV, No. 7, pp. 49-56.) Experimental Surgery. (Chirurgie expérimentale.) T. Tuffier.
39 *Medical Ethics. (La morale professionale du médecin.) A. Pinard.
40 Diet for the Tuberculous. (L'alimentation dans la tuberculose pulmonaire.) C. Malibran.
41 (No. 8, pp. 57-64.) *Gummatous Heart Block. (Maladie de Stokes-Adams par lésion scléro-gommeuse du faisceau de His—Herzblock.) Vaquez and Esmein.
42 *Lactic Ferment for Disinfection of the Intestines. (L'emploi des ferments en vue de la désinfection intestinale.) A. Fournier.
43 (No. 9, pp. 65-72.) Fat Acids and the Tubercle Bacillus. (Acides gras et bacille tuberculeux.) J. Camus and P. Pagniez.
44 *Disinfection of Japanese Troops on Their Return from Manchuria. (Désinfection des soldats japonais.) P. Desfosses.
45 *Treatment of Hemorrhoids by Local Injection of Carbolized Glycerin. (Traitement des hémorrhoïdes.) H. Vulliet.
46 (No. 10, pp. 73-80.) *Auscultation of the Apex in Young Soldiers. (Anomalies respiratoires.) G. H. Lemoine.
47 Aid for Maternity. (Assistance maternelle.) V. Bue.
48 Why and When to Use the Stomach Tube. (Sonde stomacale.) A. Martinet.

39. **Medical Ethics.**—Pinard quotes Voltaire, that there is only one morality, as there is only one geometry. Very few people know geometry, but as soon as they study it a little they are all in accord. He protests against the remark he so frequently hears from patients: "I consulted a little doctor around the corner," or "a little country doctor where I was staying." He drew the picture of these "little doctors" forever traveling around the city streets and climbing staircases or jogging along the country roads, going, going, going all the time, never refusing their services, going into the wretched retreats of poverty, knowing well from dire experience that they can not rely on being paid for their services, not even with gratitude, but going still, simply doing their duty as they see it. "These," Pinard remarks, " to my mind, are the great physicians." Among other phases of medical ethics he discusses the question of responsibility, observing that few professions require such prompt decisions as the medical profession or impose such a burden of responsibility. He has known physicians who gave up the idea of practicing after graduating with high honors, crushed by the weight of the responsibilities of a medical practice. Commenting on the fact that success does not always crown effort, even the most skilful, the most conscientious, he says that the physician is neither infallible nor all-powerful. In case of failure he must always expect to be blamed. In case of failure he may be arrested, treated as a malefactor and imprisoned, but the fear of blame should not deter him, even if it brings him in conflict with the courts of justice, if he acts according to the rules of the art. The question as to whether or not a physician should ever interrupt the course of a pregnancy, Pinard answers by saying that it is justifiable only when the mother is on the point of death from some affection caused or aggravated by the pregnancy. If the physician does not interfere, both mother and child will die, as the child is as fatally condemned as the mother. By interfering the physician has a chance of saving the mother. Referring to the question of professional secrecy Pinard says that it is a good symbol of the rôle of the physician in society, his task being to defend at the same time the interests of the individual and the interests of the public at large. Brouardel advised physicians to maintain the strictest professional secrecy at all times, but in daily life he frequently violated this rule, and Pinard thinks that there are many occasions when the physician would be acting contrary to his sense of right if he adhered strictly to the letter of the law. In case one of his clients, in a contagious stage of venereal disease, announced his approaching marriage, and could not be induced to postpone it, Pinard says that he would go directly to the father of the prospective bride and say to him: "Do not give your daughter in marriage to that young

man." This is all he would say, but this would surely be enough. He might be sued for damages by his client, and he might be condemned by the courts, but his conscience would be at peace. He thinks that this mode of conduct should be taught in the medical schools. In this point he differs from other French writers on medical ethics. He believes that the time is coming when the matter of health on both sides in the marriage contract will be regarded more than at present, and that the family physicians of the two families will confer, as the lawyers now confer over the marriage settlement. On the other hand, he declares that he would never denounce any one to the courts. He might testify that a man was the victim of poisoning, but he would never suggest who had done the crime. He would violate professional secrecy by reporting that a child to whom he had been called was the victim of inhuman treatment, and he would report to the authorities a case of epidemic disease, but no power could compel him to denounce the author of a crime. He would also warn a wet nurse that she would be incurring great risks if she took charge of a child whom he knew to have inherited syphilis, if the parents insisted on engaging her, against his warning. In regard to the question of fees, he says that the physician frequently gives advice to individuals and to communities which conflicts directly with his material interests. Members of no other profession do this, and physicians thus occupy a place apart. In charging for his services the physician should bear in mind the situation of his client and the importance of the service rendered. The patient sometimes fails to recognize the importance of the service rendered, as when the physician discovers some affection and refers him to a surgeon, but the sharing of the fee is only justifiable, proper and ethical when it is done openly before the patient.

41. **Gummatous Heart Block.**—Vaquez and Esmein give the clinical history of a case of a syphilitic lesion in the bundle of His, under observation for several months. The Stokes-Adams syndrome and the tracings of the pulse revealed the obstacle to the transmission of the impulse in the heart—the ventricular pause coinciding with the persistence of the contraction of the auricle. Autopsy showed the obstacle to be a sclero-gummatous lesion in the bundle of His. The patient was a man of 49, the first signs of trouble being syncope, with convulsions on waking, such crises recurring at intervals. Sometimes during a crisis the pause in the pulse lasted as long as 6 seconds; it ranged between 36 and 60 at other times. The recent researches on the anatomic basis for the Stokes-Adams syndrome have thrown much light on the origin of paroxysmal and permanent bradycardia.

42. **Ferments for Disinfection of the Intestines.**—Fournier says that the ideal disinfectant for the intestines would be an aërobic ferment able to transform sugar into formic acid, but nothing of the kind is known. Brewer's yeast answers some, but not all of the desired conditions for a disinfectant, and it frequently fails to exert any action, while the generation of alcohol is not always desirable, and the yeast is not resistant enough to act along the entire length of the digestive tract. The only ferment known to date which adapts itself to anaërobic conditions and acts directly on the carbohydrates, while very resistant to external influences, is the lactic ferment. The combination of the lactic streptobacillus and the lactic streptococcus in symbiosis is proving an efficient and reliable means of disinfecting the intestines.

44. **Disinfection of the Japanese Troops on Their Return from Manchuria.**—Desfosses gives an illustrated description of one of the disinfection stations where the 800,000 troops returning from the campaign in Manchuria were disinfected, persons, arms and baggage. Not even the highest officials were allowed to land without passing through the disinfecting station. About an hour and ten minutes were required for the process, the effects being disinfected while the men bathed, and afterward, in dressing gowns, smoked a cigarette and took a cup of tea in the last hall through which they were passed before their effects were returned to them in the bags in which they had been checked. The precautions against importation of disease were carried to such a point that all the money brought from Manchuria was taken up in the stations and fresh Japanese bills given in exchange. Desfosses states that he does not know which to admire most, the spirit of detail, the spirit of organization, or the spirit of discipline which made this summary disinfection of 800,000 men possible. He adds that the Japanese apply the scientific methods learned from western civilization with a rigor and a fidelity which western countries might do well to imitate.

45. **Treatment of Hemorrhoids with Carbolized Glycerin.**—Vullier uses a 60 or 80 per cent. solution and injects the fluid at the base of each hemorrhoidal nodule, guided by the finger in the anus. A Pravaz syringe is used, and one or two drops are injected into the base of each nodule. The patient should be under the influence of an anesthetic to complete relaxation, and the sphincter should be stretched slowly with the thumbs bent at right angles. The nodules swell and turn a color that is apt to alarm the physician the first time, but there is nothing to fear. The patient has to stay in bed for from three to five days as the nodules gradually shrivel. No assistance is required for the injections and no special preparation. There is no bleeding, and the ultimate results, he asserts, are excellent, just as after more radical intervention.

46. **Anomalies in Respiration as Early Sign of Tuberculosis.**—Lemoine found in examining 945 men entering the military service that 99 showed some anomaly in respiration on auscultation at the apex. In 18 the anomalies were explained by an old pleurisy, but in the others they suggested a possible tuberculous process. They were observed almost exclusively with persons showing an inherited predisposition. In determining their aptitude for the military service the general condition was the principal factor considered. When this was good the soldiers were not dismissed, but were kept under observation, and weighed monthly. The results confirmed the advantages of military service in such cases, the conditions of life being more hygienic than in factories or the like. The men gained in weight and threw off their respiratory trouble with but few exceptions. In these, persisting emaciation, exaggerated fatigue and slight impairment of the general health were regarded as sufficient cause for dismissal, without waiting for other signs of tuberculosis. Lemoine's examination of thousands of men has demonstrated that inspiration is stronger on the right than on the left side in young men, except in the left-handed. The difference between the two sides is more marked in men who have occasion to use the right arm considerably. Auscultation of the preclavicular region is particularly instructive, as also of the top of the axilla. The examination should be repeated three times, with a month's interval for absolutely reliable findings. Among the 945 men examined, in 64 there was a settled and persisting diminution of the inspiration noted on auscultation of the right subclavicular region. In another group, besides the settled and persisting diminution in inspiration, expiration under the right clavicle was unduly prolonged. In another group the inspiration was rough and low on auscultation of the left clavicle, and in some there was unduly prolonged expiration. One man exhibited respiratory insufficiency of the entire right lung. He gained in weight and left the service at the end of his term in perfect general condition. The men thrived in camp and barracks, and the respiratory findings became normal, as after a course in a sanatorium.

Semaine Médicale, Paris.

49 (XXVII, No. 8, pp. 85-96.) Anatomic Conditions Necessary for Ileocecal Invagination. (Invag. ileo-cecales.) R. Leriche and P. Cavaillon.
50 *Cancer. (Cancer et milieu intérieur). L. Legrand.
51 *Uterine Hemorrhage in Syphilitics. (Métrorrhagies par lésions syph. de l'utérus.) A. A. Mouratov.

50. **Cancer.**—Legrand ascribes to the blood the rôle of maintaining in the normal path of development the cells of the vertebrate animals. The stability of the composition of the blood corrects the deviations impressed on the evolution of the cells by external influences. Cancer research, he thinks, should be conducted along the lines of the specific cytotoxic

serums, with special regard to the development of the innocent tumors as the first step toward knowledge of the pathogenesis of cancer. He points out as a significant fact that the vertebrates alone have the sad privilege of cancer, and that they do not have it during the embryonal stage when the conditions approximate more closely those of invertebrate existence.

51. **Metrorrhagia in Syphilitics.**—Mercurial treatment is sometimes able to conquer rebellious uterine hemorrhages even in women supposedly free from venereal disease. Several striking instances are related of complete relief from the distressing metrorrhagia under a few days of mercurial medication. The hemorrhage may occur in such cases without any appreciable lesion in the uterus.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

Last indexed, XLVII, page 1420.

52 (XIII, No. 1, pp. 1-100.) *Total, Simple Inflammatory Contraction of the Stomach, and Fibroid Polyserositis—"Icing Stomach." (Totale, einfach entzündliche Magenschrumpfung und fibröse Polyserositis—Zuckerguss. K. v. Sury.

53 *Further Remarks on the Digestive Bead Test. (Perlenverdauungsprobe.) M. Einhorn.

54 Elastic Tissue of the Stomach. (Elastisches Gewebe des Magens.) E. Schutz.

55 *Case of Rheumatism of the Stomach with Incidental Hematemesis of Uncertain Origin. (Rheumatismus des Magens mit gelegentlichen Hämatemesen.) H. Illoway.

56 Pathology of Catarrhal Icterus. (Icterus catarrh.) L. Fischl.

52. **Total Inflammatory Contraction of the Stomach.**—After reviewing 172 original articles from the literature bearing on gastric cirrhosis and fibroid degeneration, von Sury reports a case with the postmortem findings in which the clinical diagnosis had been cancer of the stomach, in a person long subject to valvular incompetency. The patient was a man of 65 and the anatomic findings also suggested diffuse scirrhous carcinosis of the stomach, involving the peritoneum, pleura and pericardium. The microscope, however, failed to confirm the diagnosis of cancer, and the findings are interpreted as representing the final stage of a simple, inflammatory, more or has general uniform contraction of the stomach, gastric cirrhosis, accompanied by a fibroid polyserositis. He concludes from these data that simple inflammatory contracted stomach is a morbid entity *sui generis*—in the present case the result of congestion from a cardiac defect. Differentiation is possible only with the microscope.

53.—This article has already appeared in THE JOURNAL, Feb. 2, 1907, page 407.

55.—See THE JOURNAL, Feb. 17, 1906, page 541.

Berliner klinische Wocnenschrift.

57 (XLIV, No. 5, pp. 125-148.) *Spirillum obermeieri. (Spirillum Obermeieri.) C. Fraenkel.

58 *Experimental Study of Serum Diagnosis of Syphilis. (Wassermannsche Serodiagnostik bei Lues.) A. Schütze.

59 *Juvenile Physiologic Albuminuria. (Juv. phys. albuminurie.) B. Ullmann.

60 *Phototherapy in Dermatology. (Anwendung des Lichtes in der Derm.) Kromayer.

61 *Importance of Infection from Milk for Origin of Primary Intestinal Tuberculosis in Children. (Bedeutung der Milchinfektion.) J. Fibiger and C. O. Jensen. Concluded.

62 *Treatment of Abdominal Bullet Wounds on the Field. (Behandlung der penetrierenden Bauchschüsse im Felde.) Hildebrandt.

63 (No. 6, pp. 149-180.) Present Status of Induced Premature Delivery. (Künstliche Frühgeburt.) J. Veit.

64 *Serum Treatment of Dysentery. (Serotherapie bei Dys.) T. Skschivan and W. Stefansky.

65 *Sphygmoscope. (Ueber ein Sphygmoskop.) M. Rheinboldt (Kissingen).

66 *Infant Feeding. (Säuglingsernährung.) W. Lewin.

57. **Spirillum Obermeieri.**—Fraenkel's extensive experimental research has demonstrated, he claims, that various animals are susceptible to this spirillum, especially white mice, and that infection confers active immunity. The immunization, however, did not protect against African tick fever, confirming the assumption that American relapsing fever and the African tick fever are distinct entities.

58. **Serodiagnosis of Syphilis.**—Schütze's findings to date have always been corroborative of Wassermann's assertions in regard to the diagnostic value of the serum test based on Bordet's discovery of the specific complement binding. The test has been described in these columns as the hemolytic test from deviation of the complement. In testing for syphilis, it is applied to the cerebrospinal fluid, obtained by lumbar puncture.

59. **Juvenile Albuminuria.**—Ullmann examined the urine of 42 school children a number of times and found albumin in a third of the cases, although the children were all healthy. Only one had passed through scarlet fever; 9 had had measles, and one recurring tonsillitis. In 3 instances the parents stated that the children had never had an acute infectious disease. On the other hand, a considerable proportion of the children free from albuminuria had a history of scarlet fever or measles in the past. The amount of albumin ranged from traces to 10 per thousand—this largest proportion being found in the urine of a girl in apparently robust health. He remarks that this juvenile physiologic albuminuria usually vanishes without treatment or persists whatever treatment may be instituted. It does not seem to have any effect on the general health or life expectancy.

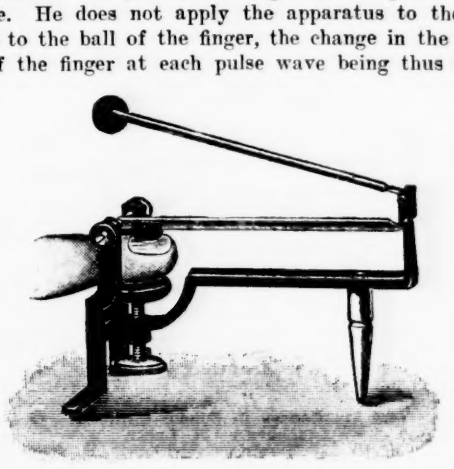
60. **Phototherapy in Dermatology.**—Kromayer relates his favorable experiences with the quartz lamp which he has devised for application of the chemical rays to cutaneous affections.

61.—See abstract No. 89 in THE JOURNAL, March 9, 1907, page 914.

62. **Treatment of Abdominal Bullet Wounds on the Field.**—Hildebrandt reviews the publications of the last few years on this subject, and states that the fate of those wounded in the abdomen depends in a great measure on the care with which they are handled and on complete abstention from food and drink. In his experience in South Africa he remained with the wounded of this class, collected in a field hospital, relying on the consideration of the victorious enemy, and ascribes the low mortality, 44 per cent., to the circumstance that no attempt was made to transport the wounded.

64. **Serum Treatment of Dysentery.**—In this communication from Odessa, experiences in Russia with serum treatment of dysentery are reviewed and compared with those obtained elsewhere. A series of 15 cases is reported in which the patients were treated with serum from a horse immunized with filtrates of three-week cultures of the Shiga bacillus. In the course of a year, 1,280 c.c. had been injected; the curative serum obtained had a purely antitoxic action. Slight if any by-effects were observed and the curative results were most gratifying.

65. **Sphygmoscope.**—Rheinboldt has succeeded in producing an instrument which shows each pulse beat by the swinging of a long straw lever, thus allowing visual inspection of the pulse rate. He does not apply the apparatus to the radial pulse but to the ball of the finger, the change in the circumference of the finger at each pulse wave being thus visually



The Sphygmoscope.

recorded. The pulse wave of course loses some of its force by the time it reaches the finger tip, and allowance must be made for this. The illustration shows the little apparatus with the magnifying double lever used. The patient sits beside the table, the forearm bent at a right angle and resting its entire length on the table, parallel to the edge. The convenience and

easy reading of the findings renders the apparatus especially useful when prolonged examination of the pulse rate is required to determine its frequency, regularity and evenness. Any kind of arrhythmia is at once rendered objectively evident. In one instance Rheinboldt was able with this apparatus to convince a hypochondriac patient of the regularity of his pulse rate; in another case to prove to the patient the cure of his previous arrhythmia under treatment. In 2 cases the behavior of the lever suggested the possibility of unsuspected aortic insufficiency, which further examination revealed. In case of extremely feeble heart action, the apparatus sometimes fails, but, if applied again after physical exertion or hearty eating, then gives positive findings. The sphygmoscope by no means takes the place of the sphygmograph, but can be used a dozen times where the complicated Riva-Rocci procedure would scarcely be thought of. Rheinboldt is convinced that this apparatus will prove extremely useful in daily practice.

66. **Successful Infant Feeding.**—Lewin reports five years of unfailing success in infant feeding with undiluted cow's milk. He believes that an organ develops better when demands are made on it, and from the fourth week gives the infants in his charge undiluted cow's milk. At first they are given 200 c.c. (nearly 7 ounces) of milk and the same amount of water. Each week 50 gm. (1½ ounces) are added to the amount of milk and the same amount of water is omitted. By the end of the first month the children are taking 400 c.c. (13½ ounces) of undiluted milk, and this amount is increased by 100 c.c. (3 ounces) each month. The only modification of the milk which he allows is the addition of milk sugar, of which two tablespoonfuls are added to each quart. At first the children are fed every two and a half hours; the last feeding is at 10 p. m., after which nothing is given until morning, as he believes that the infant stomach needs rest as much as the adult. On this diet the children thrive, have no tendency to constipation, and they urinate less, thus relieving the child of chafing and eczema which is so often followed by furunculosis. No signs of rachitis have ever been observed in the children he has fed on these principles, and they do not have the large bellies noticed so often among artificially fed infants. He gradually reduces the number of feedings to four. The milk, in an earthen jar, is set in a pan of water and boiled up once; it is then covered and placed in a cool place. The less handling and the simpler the vessels used, he says, the more easily they are cleaned and the less danger of contamination of the milk. He adds that although these views contradict those generally accepted, they are the result of years of experience and observation, and the children have thrived, not only at the time, but afterward. The principles are not new, but have never been given the attention they deserve, while the general infant death rate still keeps appallingly high.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

67 (XXXIII, No. 5, pp. 169-208.) *Improved Technic for Rapid Staining of Blood Parasites, Spirochetes, Gonococci, Diphtheria Bacilli and Other Micro-organisms. (Neues Verfahren zur Schnellfärbung, etc.) F. Loeffler.
68 *Spinal Anesthesia. (Lumbalanästhesie mit Tropacocain.) P. Bosse.
69 *Frequently Favorable Influence of Quinin on Uterine Contractions. (Einfluss des Chinins auf die Wehenthätigkeit.) A. Mäurer.
70 *Fever with Carcinoma. (Fieber bei Carc.) A. Alexander.
71 Ultra-violet rays in Ophthalmology. (Uviolbehandlung und Augenkrankheiten.) Axmann.
72 Aspirating Pipette for Measuring Amounts of Serum for Agglutination Test. (Saugpipette sur Widalschen Reaktion.) Fischer.
73 Deafness and Its Causes in School Children. (Schwerhörigkeit und deren Ursachen.) H. Laser.
74 Statistics of Breast Nursing. (Stillen.) F. Prinzing.
75 Lack of Suitable Dwelling Places. (Wohnungsmängel.) Landsberger.
76 *J. Loeb's Artificial Parthogenesis and Heterogeneous Hybridization. (Die Untersuchungen J. Loebs.) E. Schwalbe.
77 (No. 6, pp. 209-248.) *Hysteria and Sickness Insurance. (Hysterie und Invalidität.) E. Meyer.
78 *Early Diagnosis of Chronic Lead Poisoning. (Frühdiagnose von chron. Bleivergiftung.) Frey.
79 Two Cases of Enlargement of Colon in Adults. (Hirschsprungsche Krankheit.) von Schuckmann.
80 General Anesthesia with Mixed Chloroform and Oxygen. (Die Narkose mit dem Roth-Draegerschen Tropf-Apparat.) B. Rosenthal.
81 Precocious Menstruation and Sexual Characteristics in Child 3 Years Old. (Eine 3 jährige Virgo.) A. Stein.
82 Recent Legal Decisions in Medical Matters. (Rechtsprechung in ärztlichen Angelegenheiten.) Flügge. (Commenced in No. 3.)

67. **Improved Technic for Staining Micro-organisms.**—Loeffler has found that by slightly modifying and boiling the Giemsa stain it is possible to show up the bacteria, the pale spirochete, and other micro-organisms within a few minutes. He has been making extraordinary efforts to find some technic that will show the germ of foot and mouth disease which is so small that it passes through filters and can not be detected even with the strongest microscope. He has been unsuccessful in these attempts, but the improved technic which he describes is one of the side issues in this research. The specimens must be thin and be fixed in alcohol-ether. They are then treated with four solutions: 1, a 0.5 per cent. solution of malachite green crystals with zinc bichlorid (Chlorzinkdoppelsalz); 2, a 0.5 per cent. solution of soda arseniate; 3, a 0.5 per cent. solution of pure glycerin, and 4, the Giemsa stain. Three drops of the arsenic solution and one drop of the malachite green solution are added to the specimen and allowed to remain in contact one minute. The specimen is then rinsed vigorously. Then 5 c.c. of the glycerin solution are poured into a test tube and from 5 to 10 drops of the Giemsa stain are added. The whole is then heated to boiling point over a flame and poured hot over the cover glass, where it is left for from 5 to 10 minutes, and is then poured off, after which the specimen is rinsed again under running water. The glycerin-Giemsa mixture can be boiled and used over and over again. He commends this technic as the simplest, most rapid and most effective known to date. For blood parasites and gonococci he uses a different technic which he believes to be equally an improvement over those now in vogue. To 4 parts of 2.5 per cent. borax and 1 per cent. methylene blue, one part polychrome methylene blue is added, and to the mixture is then added an equal amount of a solution of 0.05 per cent. bromeosin B extra. The specimen is then stained with the mixture, slightly warmed, for one minute, and then decolored with a mixture of 5 parts tropäolin 00; 0.5 parts acetic acid, and 100 parts water, after which the specimen is rinsed anew. The blood corpuscles show pale with this technic, and the parasites in and between them stand out very prominently. Anthrax, plague, diphtheria, and influenza bacilli are also shown up well by this technic. With gonococci he decolors with a mixture of 177 parts alcohol, 20 parts of a 1 per thousand solution of bromeosin and 3 parts acetic acid. This draws the stain out of the nuclei of the cells, but not out of the gonococci, which take and keep the stain so intensely that they show well even under a low power microscope.

68. **Spinal Anesthesia.**—Bosse reviews the history of spinal anesthetics to date and states that experience has shown them to be by no means such harmless measures as was at first assumed.

69. **Influence of Quinin on Contractions of Uterus.**—Mäurer reports from Pfannenstiel's clinic 78 cases in which quinin was given during parturition to induce more energetic labor. In 61 cases the favorable influence of the quinin was unmistakable. It is entirely harmless for both mother and child, and proved exceptionally useful in promoting labor pains in induced premature delivery and in treatment of abortion. The quinin seems to make the uterine musculature more sensitive to the action of the nerves. It failed to show any influence in 17 cases, probably either because the musculature was abnormally weak or the dose too large, paralyzing instead of stimulating. About 1 gm. (15 grains) was given by the mouth and this dose repeated in two, four or five hours as the effect subsided. In very few cases was as much as 3 gm. (45 grains) required. About 11 hours had been the previous minimum duration of induced premature delivery in the clinic with the hystereurynter. This period was shortened by several hours by the quinin, so that delivery was complete in four and a half hours in two cases. In one case hemorrhage followed a fall in the fourth month of pregnancy. After five

days, the hemorrhage still continuing, 0.3 gm. (about 5 grains) of quinin was given and repeated in half an hour. Labor pains followed and the ovum and decidua were expelled within five hours without further hemorrhage. As a rule, 1 gm. (15 grains) of quinin is given, and, if no effect is observed, 0.5 gm. after an hour and 0.5 gm. half hour later.

70. **Fever with Cancer.**—Alexander relates a number of instances of fever in cancer patients, the result of autointoxication from absorption of the toxic products elaborated by the carcinoma. This is particularly liable to occur with cancer in the digestive tract. He states that there does not seem to be any characteristic type of the fever in these cases.

76. **Artificial Parthogenesis.**—Schwalbe has translated into German J. Loeb's publications on this subject, and is convinced that they represent a suggestive contribution to our knowledge in regard to the causation of malignant tumors. In Loeb's experiments the cells are stimulated to extraordinary development by chemical influences, and recent research on cancer has rendered it probable that something of the kind is responsible for the excessive proliferation of the cancer cells. Loeb's experiments also throw light, he thinks, on certain problems in teratology.

77. **Hysteria and Sickness Insurance.**—Meyer reports several cases of pronounced hysteria in which the disturbances were so severe that they interfered with the earning capacity, and the individual was thus entitled to part pay from the sickness insurance society. He reviews the differentiating points, remarking that hysteria is a psychic affection and that the psychic symptoms are the ones to be regarded as most important, though the physical symptoms must not be overestimated. In all doubtful cases the patient should be under stationary observation. The longer the patient is left untreated, the smaller the prospects of improvement. Treatment by "letting alone" can be successful only when the patient is under stationary observation. Cases in which the severe symptoms have recently developed are more amenable to proper treatment than when these are long established. The prospects are less favorable in the cases of hysteria which develop on the basis of long continued physical exhaustion or the menopause. These belong more in the domain of hysteroneurasthenia.

78. **Early Diagnosis of Chronic Lead Poisoning.**—Frey states that for diagnosis, control of the results of treatment, and for personal prophylaxis, determination of granular degeneration of the red corpuscles is of the utmost importance. Grawitz was the first to call attention to the value of this sign in certain affections, and Frey has found it peculiarly instructive in lead poisoning. When cancer, intermittent fever, pernicious anemia, sepsis and intestinal putrefaction can be excluded, the discovery of the basophilic granules in a person exposed to lead poisoning is a sign that he is seriously affected by the poison. Grawitz recommends that workers with lead should have their blood examined from time to time as a prophylactic measure. Frey reports his experiences in this line with 39 workers on lead whose blood was examined, confirming Grawitz's assertions in every respect.

Münchener medizinische Wochenschrift.

83 (LIV, No. 5, pp. 201-248.) Spirillum of Tick Fever. (Spirillen des Zeckenfiebers.) C. Fraenkel.
84 *Do the Leucocytes Have a Heterolytic Action? (Wirken weisse Blutkörperchen heterolytisch?) M. Mosse.
85 *Heredity in Ulcer of the Stomach. (Heredität beim Ulcus ventriculi.) A. Huber.
86 *Pathology of Appendicitis. (Appendizitis.) M. Flesch.
87 Unilateral Clubbed Fingers. (Einseitige Trommelschlägelfinger.) T. Groedel.
88 *Frequency of Gonorrhea in Germany. (Tripper in Deutschland.) A. Blaschko. Id. H. Vörner.
89 Color Index of the Red Corpuscles. (Färbeindex.) W. Türk.
90 Causal Agent of Vaccinia. (Was wissen wir über den Vakzineerreger?) Mühlens and Hartmann.
91 Superficial Action of Percussion. (Oberflächenwirkung des Perkussionsstosses.) A. Weil.
92 (No. 6, pp. 249-304.) Resistance to Anthrax and Origin of Anti-anthrax Substances. (Milzbrand, etc.) M. Gruber and K. Futaki.
93 *Antitoxin and Albumin. (Antitoxin und Eiweiss.) F. Hamburger.
94 *Nervous Phenomena Accompanying Passage of Stomach Content Into the Intestine. (Nervöse Erscheinungen beim Uebergang des Mageninhaltes in den Darm.) F. A. Kehrer.
95 Determination of Blood in the Feces. (Blut in den Fäzes.) O. Schumm.
96 Two Cases of Eosinophilia of Intestinal Origin. (Darmeosinophilie.) E. Fricker.
97 *Treatment of Mastitis with Cupping Apparatus. (Mastitiden und Saugapparaten.) F. Hartmann.
98 Rubber Gloves Not Indispensable for Country Midwives. (Sollen die Landhebammen mit Gummihandschuhen ausgerüstet werden?) H. Walther.
99 Lead Box for Roentgen Tubes. (Bleikasten für R.-Röhren.) G. W. Schiele.
100 Explanation of Tuberculin Reaction by Antituberculin in Tuberculous Focus. (Tuberkulinreaction durch Antituberkulin im tub. Herd.) E. Weil.
101 *Hospitals of Western Coast of American Continent. (Hospitäler der Westküste Sud-, Mittel- und Nordamerikas.) F. Apelt.

84. **Heterolysis of Leucocytes.**—Grawitz has announced that leucocytes are considerably more transparent for the ultraviolet rays than the lymphocytes, suggesting chemical differences in the structure of their nuclei. Others have shown that the leucocytes have a proteolytic action, digesting albumin. Mosse has been studying the subject and the action of bone marrow juice on lung tissue. He found no signs of heterolysis by either leucocytes or lymphocytes.

85. **Heredity with Ulcer of the Stomach.**—Huber reports 30 cases of ulcer of the stomach in which the influence of heredity was strikingly apparent through two or more generations and in relatives. He has noted a racial predisposition, especially in regions where there is much intermarrying.

86. **Heredity in Appendicitis.**—Flesch gives the genealogic trees of a number of families in which appendicitis occurred in series of cases. In one family, 3 out of 24 persons were affected, and in another family 6 in two generations. Considering the circumstances he thinks that the cause for the repeated cases is a functional one in the main. Physical and dietetic measures to keep the bowels regular are the most important means of warding off appendicitis. The series of cases in his experience generally occurred in persons living under the same conditions and the same influences.

88. **Frequency of Gonorrhea and the Effect on Wives.**—These articles by Blaschko and Vörner were reviewed editorially in THE JOURNAL, March 2, 1907, page 800.

93. **Antitoxin and Albumin.**—Hamburger found that the milk of goats and rabbits after subcutaneous injection of horse serum contained both antitoxin and horse albumin.

94. **Nervous Phenomena When the Stomach Content is Passing Into the Intestine.**—Kehrer urges study of the phenomena that occur in some persons as the stomach content is passed along into the duodenum. He thinks that regulation of the diet might prevent the annoying phenomena. He speaks of three phases, the phase of sensation of over-loading of the stomach; the digestive phase, during which the stomach is quiet, and the phase of expulsion of the stomach content. During the phase of expulsion local phenomena occur in the stomach, heart and lungs. They consist in oppression in the epigastrium, oppression or pain in the heart region, especially when lying on the left side, palpitation and suffocation. These symptoms are probably due to direct mechanico-chemical irritation of the ramifications of the vagus, or reflex action from the stomach nerves on the nerves of the heart. The oppression causes nightmare. Any mechanical interference with the respiration, for example, by a blanket covering the face of the sleeper, may cause nightmare. Another group of nervous phenomena at the beginning of the phase of expulsion consists in waking out of the first sleep with bad dreams. Kehrer thinks that the changes in the circulation of the brain from the flow of blood to the digestive organs, causing comparative anemia of the brain, are not so important a factor in these phenomena as generally supposed. More probable, he thinks, is the assumption that some of the chyme passing into the intestines is absorbed immediately by the mucosa of the small intestine, and is passed by way of the blood to the brain and there induces the above phenomena of irritation. Whether it is the peptones, the fat acids or the bile pouring out into the duodenum, or whether with morbid digestion abnormal products are generated, or whether irritating substances from the food are the cause of the disturbances is a question still undecided. Their fur-

ther study, however, may prove very important for dietetics in general and for individual cases. Persons who suffer from these disturbances should not eat just before going to bed, or, if they eat late, should allow a certain interval to elapse before retiring. It is wise also to refrain from filling the stomach too full, and, especially at night, to take easily digested food.

97. **Treatment of Mastitis with Suction Apparatus.**—Hartmann has been very much pleased with the results of treatment of mastitis with Bier's suction apparatus. The bell must be large enough to embrace the whole breast, and incisions should be made early, each fully 1, 2 or 3 cm. long. It is unnecessary to drain. Pain is relieved at once and the fever reduced. Hartmann regards this as by far the best treatment of mastitis known to date, except for the subacute, nodular, non-suppurative forms. Exploratory suction shows by the circumscribed redness exactly where to incise for the abscess. He remarks, in conclusion, that this cupping treatment is a boon to suffering humanity, when rightly applied, and opens a wide field for gratifying work on the part of the physician.

101. **Hospitals of the Western Coast of the American Continent.**—Apelt describes his impressions of the hospitals in North, Central and South America, which he visited on a recent voyage in the Eastern Pacific. He pays high tribute to the work of the profession in San Francisco after the fire and also in the Canal Zone. He describes, further, the peculiar disease observed in Peru, called verruga peruana—Peruvian wart. He says that when a certain railroad was built, 75 per cent. of the imported workmen suffered from this disease. He was also impressed with the great frequency of tuberculosis in Central and South America.

Zeitschrift f. Krebsforschung, Berlin.

Last indexed XLVII, page 1519.

102 (IV, No. 3, pp. 525-740.) •Tumors in Fish, Frogs, Salamanders and Lizards. (Geschwülste bei Kaltblütern.) M. Plehn.
103 Function of Tumor Cells. (Funktion der Geschwulstzellen.) D. v. Hansemann.
104 Primary Enchondroma of the Lung. (Prim. Enchondrome der Lunge.) C. Hart.
105 •Tumors in Fowls. (Tumoren bei Hühnern.) M. Ehrenreich and L. Michaelis.
106 Carcinoma and Its Treatment in the Light of Biology. (Carcinom und seine Therapie.) D. Hellin.
107 Histogenesis of Inoculation Tumors on Mice. (Krebs der Mäuse.) W. Lowenthal and L. Michaelis.
108 Tumors in Hilus of Kidney. (Tumoren des Nierenhilus.) A. Salomon.
109 •Appeal to the Public for Early Operative Treatment of Cancer. (Aufforderung, etc.) J. Dollinger.
110 "Schüller's Corpuscles." (Schüllersche Körperchen.) M. Schüller.

102. **Tumors in Cold-Blooded Animals.**—Plehn relates the details of nearly 24 cases of tumors in fish, frogs or eels, and reviews the literature on the subject. Certain kinds of tumors are observed only in certain species, carcinoma of the thyroid only in salmon and trout, for example, superficial tumors only in certain other species. The reasons for this selection will repay study. He declares that fish are specially adapted for study of inherited conditions. In one pond 7 per cent. of the trout were affected with carcinoma of the thyroid, while the trout in neighboring ponds were entirely free from tumors.

105. **Tumors in Poultry.**—In this communication from the Berlin Cancer Research Laboratory a number of cancers found in poultry are reported. They include 2 cases of fibroma in the mesentery, 2 of carcinoma and 1 of sarcoma of the small intestine. Other tumors were found which contained always relics of the yolk of an egg, and were usually adherent to the ovary.

109. **Appeal to the Public for Early Operative Treatment of Cancer.**—Dollinger gives the text of the circular which he now hands to every applicant at the clinic and dispensary in his charge at Budapest. It is headed: "Cancer can be cured if operated on early." It warns of the danger of delay, emphasizing the prospects of cure with early operation, and giving the signs of cancer in the various organs, with warnings in regard to the danger of wasting time on quacks and their remedies.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

MANUALE PRATICO DELL' IGIENISTA, Per uso degli ufficiali sanitari, degli aspiranti ad uffici nella amministrazione sanitaria dello stato e dei comuni, degli allievi dei corsi complementari di igiene e degli studenti di medicina, farmacia e veterinaria. By C. Tonzig and G. Q. Ruata, con Prefazione del Prof. A. Serafini. Con. 243 Incisioni. Cloth. Pp. 64. Milan: Ulrico Hoepli, 1907.

CATHOLIC CHURCHMEN IN SCIENCE. Sketches of the Lives of Ecclesiastics Who Were Among the Great Founders in Science. By James J. Walsh, M.D., Ph.D., LL.D., Professor of Medical History, Fordham University Medical School. Cloth. Pp. 221. Price, $1.00 net. Philadelphia: The Dolphin Press, 1906.

OHIO HOSPITAL FOR EPILEPTICS AT GALLIPOLIS. Sixteenth Annual Report of the Trustees and Officers to the Governor of the State of Ohio, for the Fiscal Year ending Nov. 15, 1906. Paper. Pp. 82. Columbus: F. J. Heer, 1907.

PRINCIPLES AND APPLICATION OF LOCAL TREATMENT IN DISEASES OF THE SKIN. By L. D. Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital. Cloth. Pp. 142. Price, $1.00. New York: Rebman Company, 1907.

SURGERY OF THE BRAIN AND ITS MEMBRANES. By C. A. Ballance, M.V.O., M.S., F.R.C.S., surgeon to St. Thomas Hospital. With Illustrations. Cloth. Pp. 405. Price, 15s net. London and New York: Macmillan Co., 1907.

THE NUMERICAL PROPORTIONS OF THE SEXES AT BIRTH. By J. B. Nichols. Memoirs of the American Anthropological Association. Vol. 1. Part 4. Paper. Pp. 300. Lancaster, Pa., New Era Printing Co., 1907.

LA TUBERCULOSI. By Mario Valtorta and Gino Fanoli. Con Prefazione del Prof. Augusto Murri. Manuali Hoepli. Con 11 tavoli. Cloth. Pp. 64. Cloth. Milan: Ulrico Hoepli, 1907.

GEDANKEN UND MEINUNGEN DES LAZARETTGEHILFEN NEUMANN. Herausgegeben by Dr. Fr. Erhard. Paper. Pp. 38. Munich: Verlag der Aerztlichen Rundschau, 1907.

GIFT ODER HEILMITTEL IM UNGLÜCK? Briefe eines Arztes by Dr. med. G. Vorberg, Hannover. Paper. Pp. 26. Munich: Verlag der Aerztlichen Rundschau, 1907.

UEBER ARTERIENVERKALKUNG. By Dr. med. Hirsch. Bad Nauheim. Dritte Auflage. Paper. Pp. 24. Munich: Verlag der Aerztlichen Rundschau, 1907.

SURGERY OF GENITO-URINARY ORGANS. By J. W. S. Gouley, M.D. Cloth. Pp. 531. Price, $3.00. New York: Rebman Company, 1907.

DINING AND ITS AMENITIES. By a Lover of Good Cheer. Demy 8vo. Cloth. Pp. 478. Price, $2.50. New York: Rebman Co., 1907.

PUBLICATIONS FROM THE LABORATORIES OF THE JEFFERSON MEDICAL COLLEGE HOSPITAL. Vol. 3. Paper. Philadelphia, 1906.

NEW PATENTS.

Patents recently granted of interest to physicians:

841701 Hypodermic syringe. Justin De Lisle, New York.
842140 Organic iodin preparation. Emil Fischer, Berlin, Germany.
842097 Atomizer or pump sprayer. Ernest A. Jahn, London, Eng.
841782 Apparatus for the treatment of lung and throat diseases. Charles S. James, Los Angeles.
841988 Artificial ear-drum. Abraham Leers, Atlanta, Ga.
841702 Device for handling, lifting or supporting invalids. Thomas A. Martin, Covington, Ky.
841714 Head-truss. Walter D. Peters, Minneapolis.
842608 Artificial leg. John T. Apgar, New York.
842609 Artificial leg. John T. Apgar, New York.
842612 Obtaining solutions of bacterial poisons. Peter Bergell and F. Meyer, Berlin, Germany.
842390 Spray-producing point for atomizers. A. De Vilbiss, Toledo, Ohio.
842631 Apparatus for injecting solid vaccine matter. Hippolyte Deperdussin, Paris, France.
842669 Physicians' cabinet. Henry A. Hughes, St. Louis.
842800 Portable sick room tent. J. C. and A. E. Moore, Philadelphia.
842252 Truss. John Sault, Queensbury, N. Y.
842503 Massage apparatus. George F. Trotter and A. Bebout, St. Louis.
843319 Stethoscope. Peter A Aurness, Minneapolis.
842875 *X*-ray tube. Mylius Ehrhardt, Berlin, Germany.
843354 Electrode for therapeutic use, etc. Everett T. Nealey, Bangor, Maine.
843168 Truss. Franklin A. Nims, Greeley, Colo.
842973 Spring and mattress for invalid beds. Edith B. Preston, Mexico, Mo.
843494 Container for surgical ligatures. H. Rosenberg, Berlin, Germany.
843663 Eye-exerciser. George Bullock, Poplar Bluff, Mo.
844097 Inhaler. Yancey O. Caldwell, Paris, Tenn.
843587 Surgical instrument. Henry H. De Pew, Chicago.
843674 Massaging apparatus. E. M. Funk, Wytheville, Va.
844137 Truss. Peter Kaseler, Brooklyn.
844054 Indicator for medicine bottles. A. R. Swope, Philadelphia.
843979 Surgical eye-magnet appliance. J. B. Wantz, Chicago.